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CLIENTS

FIG. 1

Row-ID	Name	Birth Year	Gender
0	Oscar	1959	M
1	André	1976	M
2	Ariane	1965	F
3	Laure	1976	F
4	Max	1947	M

POLICIES

FIG. 2

Row-ID	Type	Date	Client Link
0	Car	1998 06 24	2
1	Car	1998 09 09	1
2	House	1998 12 11	4
3	Car	1999 01 10	4
4	House	1999 01 31	2
5	Car	1999 02 01	3
6	House	1999 02 01	3

ACCIDENTS

FIG. 3

Row-ID	Date	Amount	Policy Link
0	1998 10 03	1 000	1
1	1999 04 18	10 000	4
2	1999 04 18	800	3
3	1999 06 12	1 300	1
4	1999 08 31	300	3
5	1999 12 08	2 200	5
6	1999 12 09	1 000	0
7	2000 02 25	6 000	4
8	2000 03 20	800	1

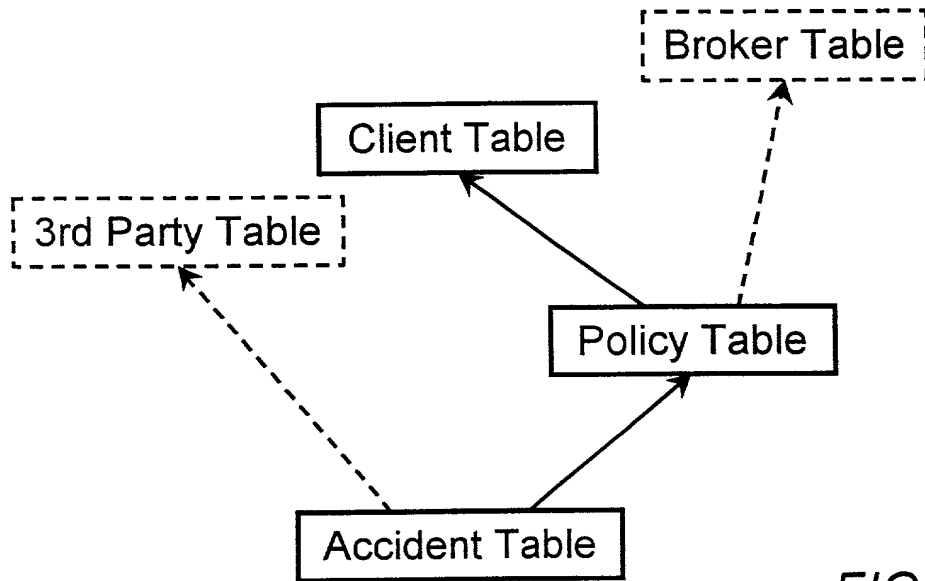


FIG. 4

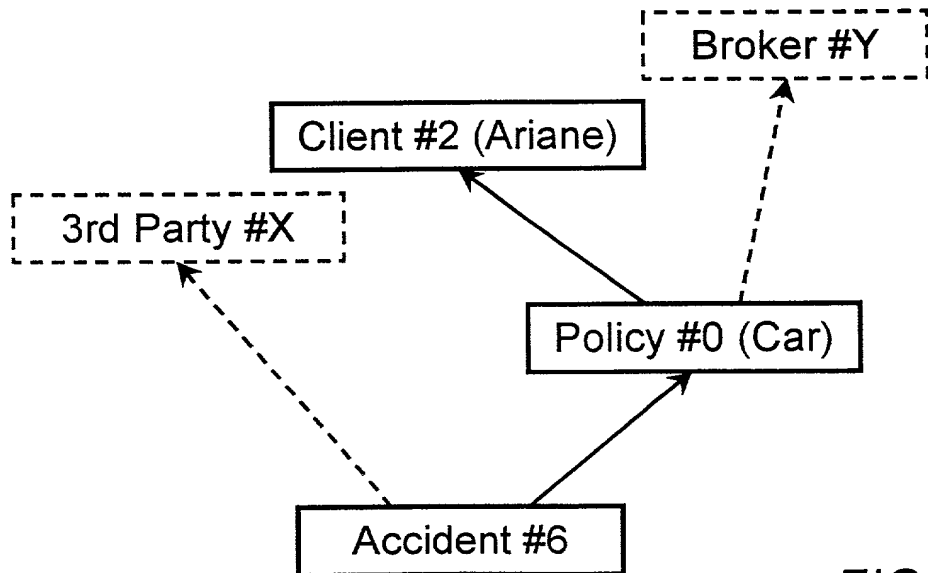


FIG. 5

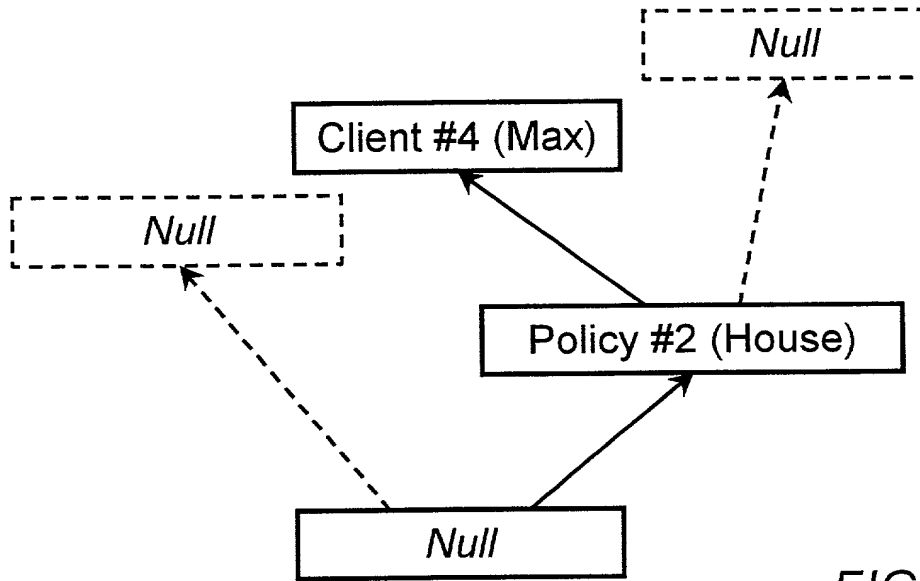


FIG. 6

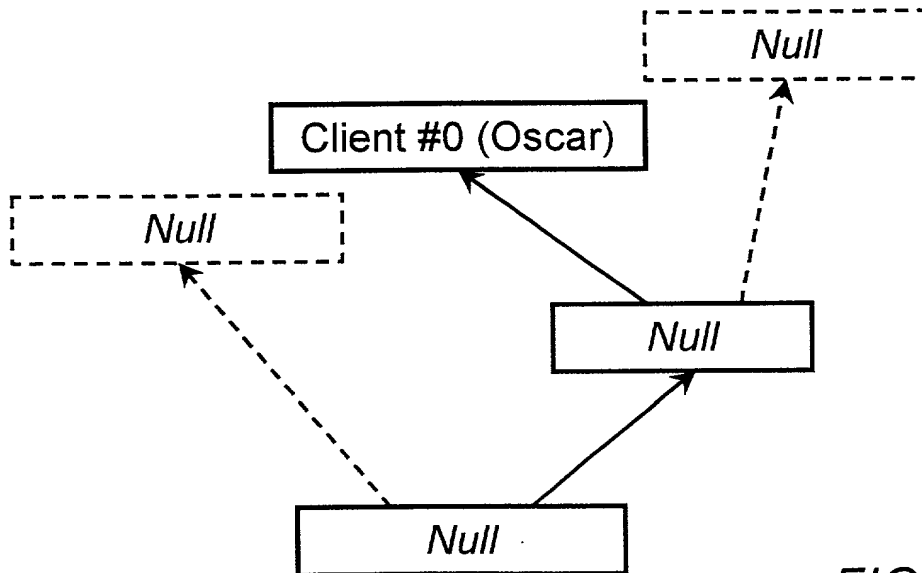


FIG. 7

FLAT FILE

Row-ID	Client Name	Birth Year	Gender	Policy Type	Policy Date	Acc. Date	Amount
0	André	1976	M	Car	1998 09 09	1998 10 03	1 000
1	Ariane	1965	F	House	1999 01 31	1999 04 18	10 000
2	Max	1947	M	Car	1999 01 10	1999 04 18	800
3	André	1976	M	Car	1998 09 09	1999 06 12	1 300
4	Max	1947	M	Car	1999 01 10	1999 08 31	300
5	Laure	1976	F	Car	1999 02 01	1999 12 08	2 200
6	Ariane	1965	F	Car	1998 06 24	1999 12 09	1 000
7	Ariane	1965	F	House	1999 01 31	2000 02 25	6 000
8	André	1976	M	Car	1998 09 09	2000 03 20	800
9	Max	1947	M	House	1998 12 11	Null	Null
10	Laure	1976	F	House	1999 02 01	Null	Null
11	Oscar	1959	M	Null	Null	Null	Null

FIG. 8

LINK TABLE

FF Row-ID	Client Link	Policy Link	Accident Link
0	1	1	0
1	2	4	1
2	4	3	2
3	1	1	3
4	4	3	4
5	3	5	5
6	2	0	6
7	2	4	7
8	1	1	8
9	4	2	-1
10	3	6	-1
11	0	-1	-1

FIG. 9

ACCIDENT AMOUNT (TRUNCATION LENGTH 3) THESAURUS

Amount Prefix	FF Row-ID List	Bitmap
0	{2,4,8}	001010001000
1	{0,3,6}	000100100000
2	{5}	000001000000
6	{7}	000000010000
10	{1}	010000000000

FIG. 10H

CLIENT NAME THESAURUS

	Name	FF Row-ID List	Bitmap
0	<i>Null</i>	-	000000000000
1	André	{0,3,8}	100100001000
2	Ariane	{1,6,7}	010000110000
3	Laure	{5,10}	000001000010
4	Max	{2,4,9}	001010000100
5	Oscar	{11}	000000000001

FIG. 10ACLIENT BIRTH YEAR THESAURUS

	Birth Year	FF Row-ID List	Bitmap
0	<i>Null</i>	-	000000000000
1	1947	{2,4,9}	001010000100
2	1959	{11}	000000000001
3	1965	{1,6,7}	010000110000
4	1976	{0,3,5,8,10}	100101001010

FIG. 10BCLIENT GENDER THESAURUS

	Gender	FF Row-ID List	Bitmap
0	<i>Null</i>	-	000000000000
1	F	{1,5,6,7,10}	010001110010
2	M	{0,2,3,4,8,9,11}	101110001101

FIG. 10C

POLICY TYPE THESAURUS

	Type	FF Row-ID List	Bitmap
0	<i>Null</i>	{11}	000000000001
1	Car	{0,2,3,4,5,6,8}	101111101000
2	House	{1,7,9,10}	010000010110

FIG. 10DPOLICY DATE THESAURUS

	Date	FF Row-ID List	Bitmap
0	<i>Null</i>	{11}	000000000001
1	1998 06 24	{6}	000000100000
2	1998 09 09	{0,3,8}	100100001000
3	1998 12 11	{9}	000000000100
4	1999 01 10	{2,4}	001010000000
5	1999 01 31	{1,7}	010000010000
6	1999 02 01	{5,10}	000001000010

FIG. 10E

ACCIDENT DATE THESAURUS

	Date	FF Row-ID List	Bitmap
0	<i>Null</i>	{9,10,11}	000000000111
1	1998 10 03	{0}	100000000000
2	1999 04 18	{1,2}	010000000000
3	1999 06 12	{3}	000100000000
4	1999 08 31	{4}	000010000000
5	1999 12 08	{5}	000001000000
6	1999 12 09	{6}	000000100000
7	2000 02 25	{7}	000000010000
8	2000 03 20	{8}	000000001000

FIG. 10FACCIDENT AMOUNT THESAURUS

	Amount	FF Row-ID List	Bitmap
0	<i>Null</i>	{9,10,11}	000000000111
1	300	{4}	000010000000
2	800	{2,8}	001000001000
3	1 000	{0,6}	100000100000
4	1 300	{3}	000100000000
5	2 200	{5}	000001000000
6	6 000	{7}	000000010000
7	10 000	{1}	010000000000

FIG. 10G

CLIENT NAME THESAURUS

Name	Bitmap	L1 Ranks	L1 Segments
<i>Null</i>	000 000 000 000	-	-
André	100 100 001 000	{0,1,2}	{100,100,001}
Ariane	010 000 110 000	{0,2}	{010,110}
Laure	000 001 000 010	{1,3}	{001,010}
Max	001 010 000 100	{0,2,3}	{001,010,100}
Oscar	000 000 000 001	{3}	{001}

FIG. 11AACCIDENT AMOUNT THESAURUS

Amount	Bitmap	L1 Ranks	L1 Segments
<i>Null</i>	000 000 000 111	{3}	{111}
300	000 010 000 000	{1}	{010}
800	001 000 001 000	{0,2}	{001,001}
1 000	100 000 100 000	{0,2}	{100,100}
1 300	000 100 000 000	{1}	{100}
2 200	000 001 000 000	{1}	{001}
6 000	000 000 010 000	{2}	{010}
10 000	010 000 000 000	{0}	{010}

FIG. 11GACCIDENT AMOUNT MACROWORD (/ 3) THESAURUS

Prefix	Bitmap	L1 Ranks	L1 Segments
0	001 010 001 000	{0,1,2}	{001,010,001}
1	000 100 100 000	{1,2}	{100,100}
2	000 001 000 000	{1}	{001}
6	000 000 010 000	{2}	{010}
10	010 000 000 000	{0}	{010}

FIG. 11H

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CLIENT NAME THESAURUS

Name	L1 Ranks	L1 Bitmap	L2 Ranks	L2 Segments
<i>Null</i>	-	00 00	-	-
André	{0,1,2}	11 10	{0,1}	{11,10}
Ariane	{0,2}	10 10	{0,1}	{10,10}
Laure	{1,3}	01 01	{0,1}	{01,01}
Max	{0,2,3}	10 11	{0,1}	{10,11}
Oscar	{3}	00 01	{1}	{01}

FIG. 12A

ACCIDENT AMOUNT THESAURUS

Amount	L1 Ranks	L1 Bitmap	L2 Ranks	L2 Segments
<i>Null</i>	{3}	00 01	{1}	{01}
300	{1}	01 00	{0}	{01}
800	{0,2}	10 10	{0,1}	{10,10}
1 000	{0,2}	10 10	{0,1}	{10,10}
1 300	{1}	01 00	{0}	{01}
2 200	{1}	01 00	{0}	{01}
6 000	{2}	00 10	{1}	{10}
10 000	{0}	10 00	{0}	{10}

FIG. 12G

ACCIDENT AMOUNT MACROWORD (/ 3) THESAURUS

Prefix	L1 Ranks	L1 Bitmap	L2 Ranks	L2 Segments
0	{0,1,2}	11 10	{0,1}	{11,10}
1	{1,2}	01 10	{0,1}	{01,10}
2	{1}	01 00	{0}	{01}
6	{2}	00 10	{1}	{10}
10	{0}	10 00	{0}	{10}

FIG. 12H

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CLIENT NAME THESAURUS

Name	L1 Ranks	L1 Segments	L2 Ranks	L2 Segments
<i>Null</i>	-	-	-	-
André	{0,1,2}	{100,100,001}	{0,1}	{11,10}
Ariane	{0,2}	{010,110}	{0,1}	{10,10}
Laure	{1,3}	{001,010}	{0,1}	{01,01}
Max	{0,2,3}	{001,010,100}	{0,1}	{10,11}
Oscar	{3}	{001}	{1}	{01}

FIG. 13A

ACCIDENT AMOUNT THESAURUS

Amount	L1 Ranks	L1 Segments	L2 Ranks	L2 Segments
<i>Null</i>	{3}	{111}	{1}	{01}
300	{1}	{010}	{0}	{01}
800	{0,2}	{001,001}	{0,1}	{10,10}
1 000	{0,2}	{100,100}	{0,1}	{10,10}
1 300	{1}	{100}	{0}	{01}
2 200	{1}	{001}	{0}	{01}
6 000	{2}	{010}	{1}	{10}
10 000	{0}	{010}	{0}	{10}

FIG. 13G

ACCIDENT AMOUNT MACROWORD (/ 3) THESAURUS

Prefix	L1 Ranks	L1 Segments	L2 Ranks	L2 Segments
0	{0,1,2}	{001,010,001}	{0,1}	{11,10}
1	{1,2}	{100,100}	{0,1}	{01,10}
2	{1}	{001}	{0}	{01}
6	{2}	{010}	{1}	{10}
10	{0}	{010}	{0}	{10}

FIG. 13H

CLIENT NAME THESAURUS

Name	L1 First	L1 Last	L2 First
<i>Null</i>	0	0	0
André	20	2	3
Ariane	5	6	12
Laure	8	12	14
Max	29	15	6
Oscar	26	26	7

FIG. 14AACCIDENT AMOUNT THESAURUS

Amount	L1 First	L1 Last	L2 First
<i>Null</i>	13	13	21
300	4	4	22
800	9	10	16
1 000	3	19	18
1 300	24	24	20
2 200	25	25	4
6 000	23	23	9
10 000	16	16	10

FIG. 14GACCIDENT AMOUNT MACROWORD (/ 3) THESAURUS

Prefix	L1 First	L1 Last	L2 First
0	21	7	19
1	30	14	25
2	1	1	27
6	28	28	28
10	18	18	1

FIG. 14H

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Address L1 Rank Next L1 Segment

1	1	0	001
2	2	0	001
3	0	19	100
4	1	0	010
5	0	6	010
6	2	0	110
7	2	0	001
8	1	12	001
9	0	10	001
10	2	0	001
11	1	2	100
12	3	0	010
13	3	0	111
14	2	0	100
15	3	0	100
16	0	0	010
17	x	0	000
18	0	0	010
19	2	0	100
20	0	11	100
21	0	22	001
22	1	7	010
23	2	0	010
24	1	0	100
25	1	0	001
26	3	0	001
27	2	15	010
28	2	0	010
29	0	27	001
30	1	14	100
31	x	32	000
32	x	33	000
33	x	17	000

FIG. 15

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Address	L2 Rank	Next	L2 Segment
1	0	0	10
2	1	0	01
3	0	11	11
4	0	0	01
5	1	0	10
6	0	13	10
7	1	0	01
8	x	17	00
9	1	0	10
10	0	0	10
11	1	0	10
12	0	23	10
13	1	0	11
14	0	2	01
15	1	0	10
16	0	15	10
17	x	24	00
18	0	5	10
19	0	30	11
20	0	0	01
21	1	0	01
22	0	0	01
23	1	0	10
24	x	0	00
25	1	26	01
26	2	0	10
27	0	0	01
28	1	0	10
29	x	8	00
30	1	0	10

FIG. 16

FIG. 17 is a diagram illustrating a client name thesaurus. The thesaurus is organized into rows, each representing a client name. Each row contains a list of associated names, which are then mapped to specific data points (e.g., CN, HP, NO, Max) for each client. The diagram shows the mapping from the client name thesaurus to the data points for each client.

CLIENT NAME THESAURUS

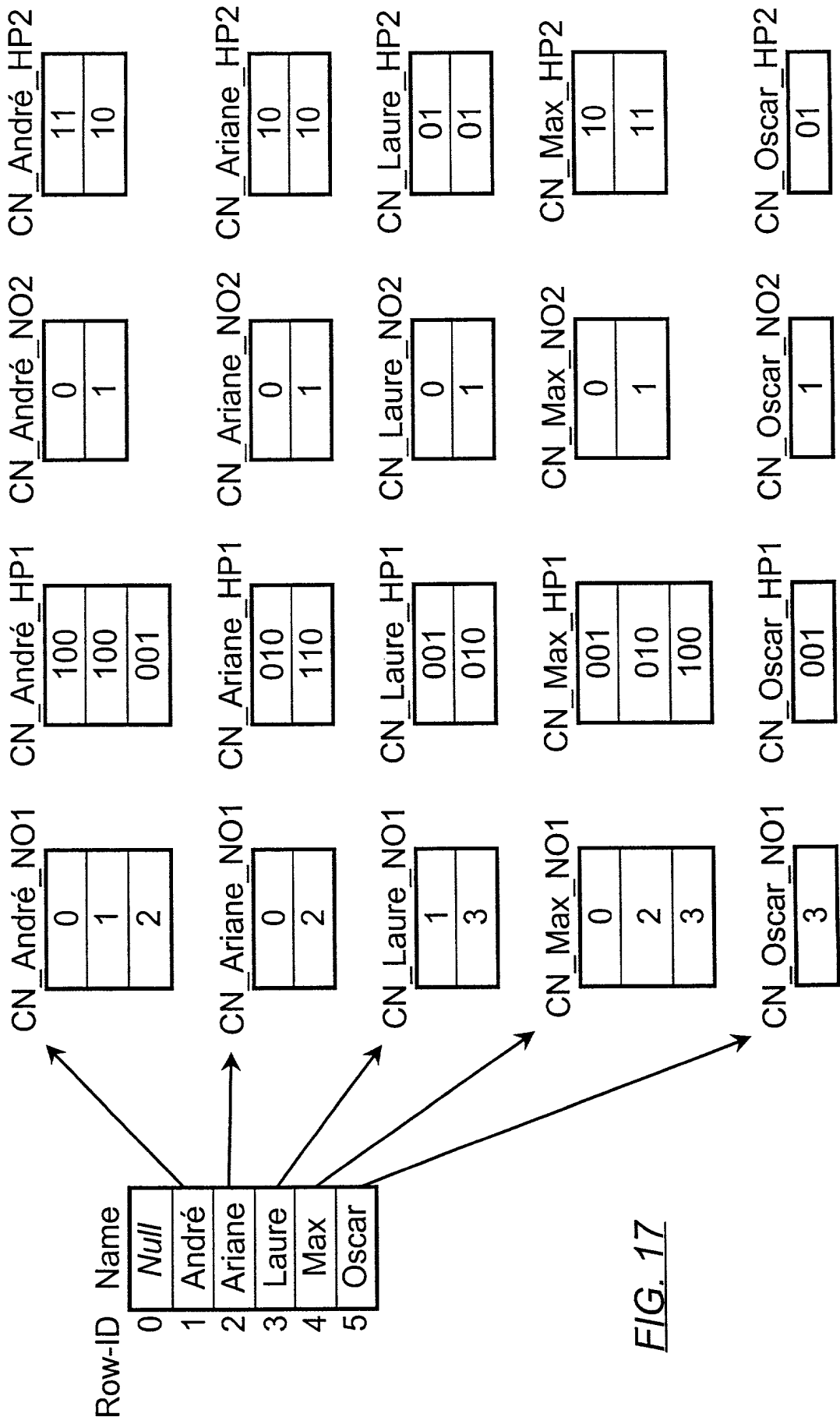
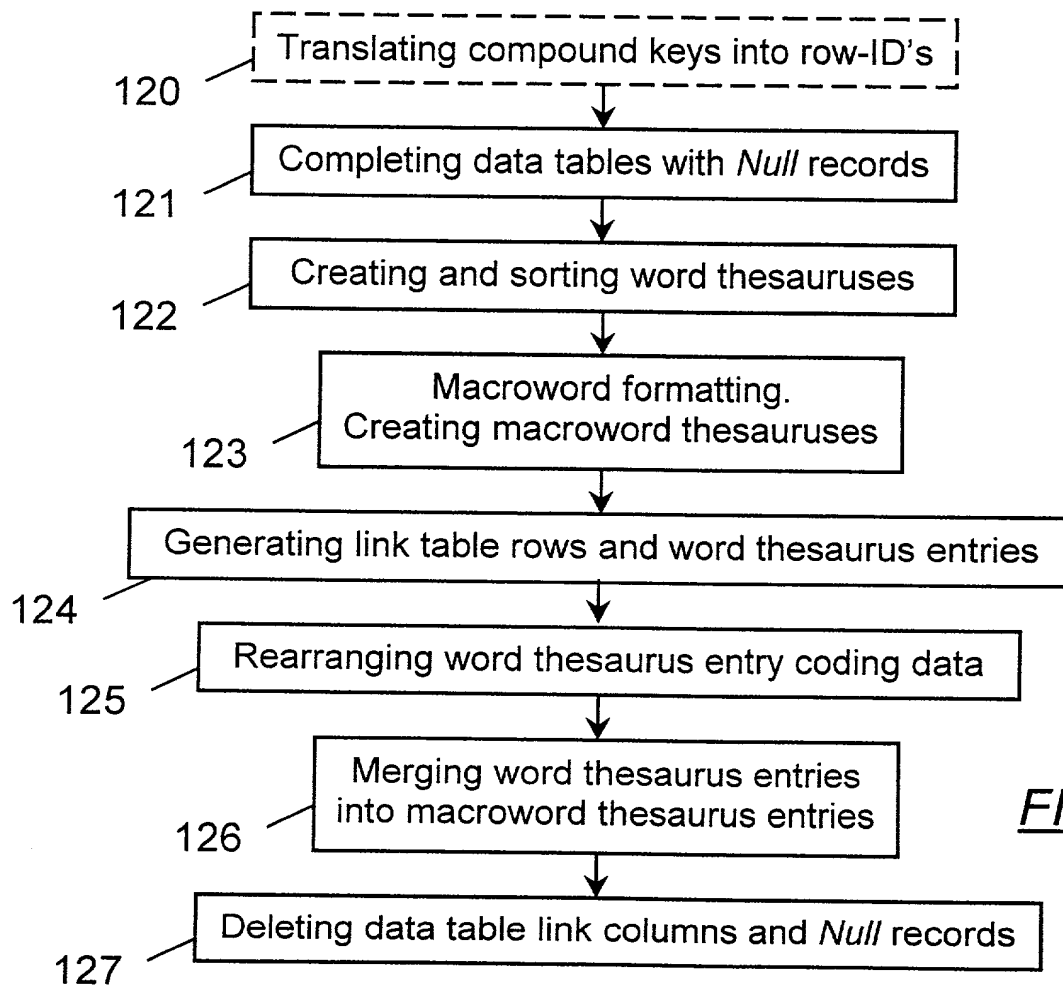
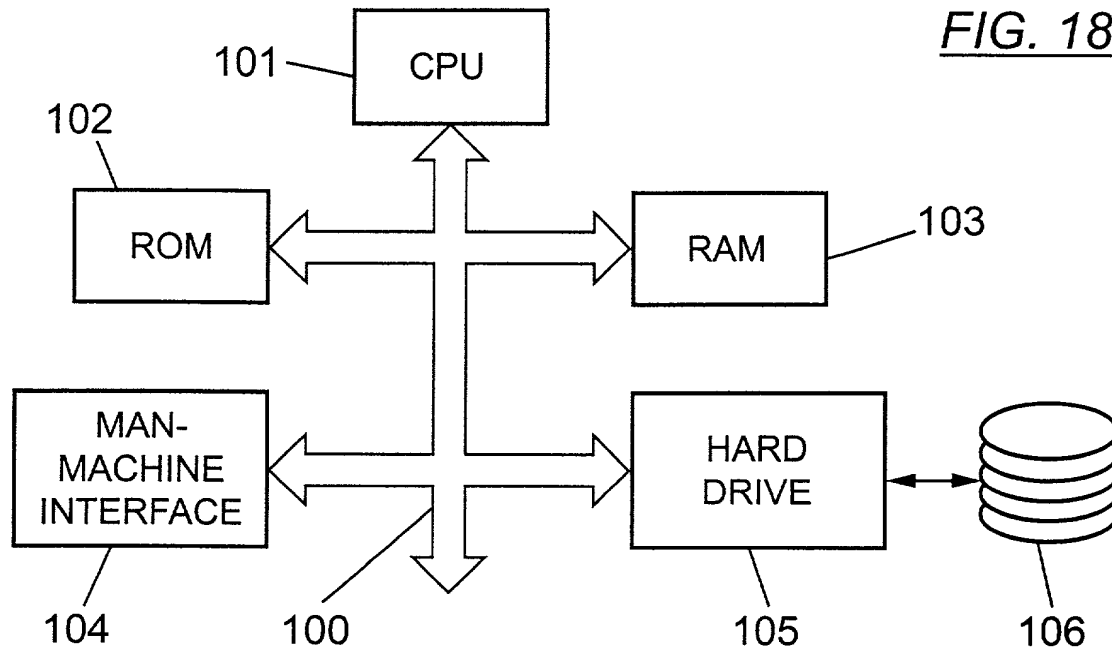
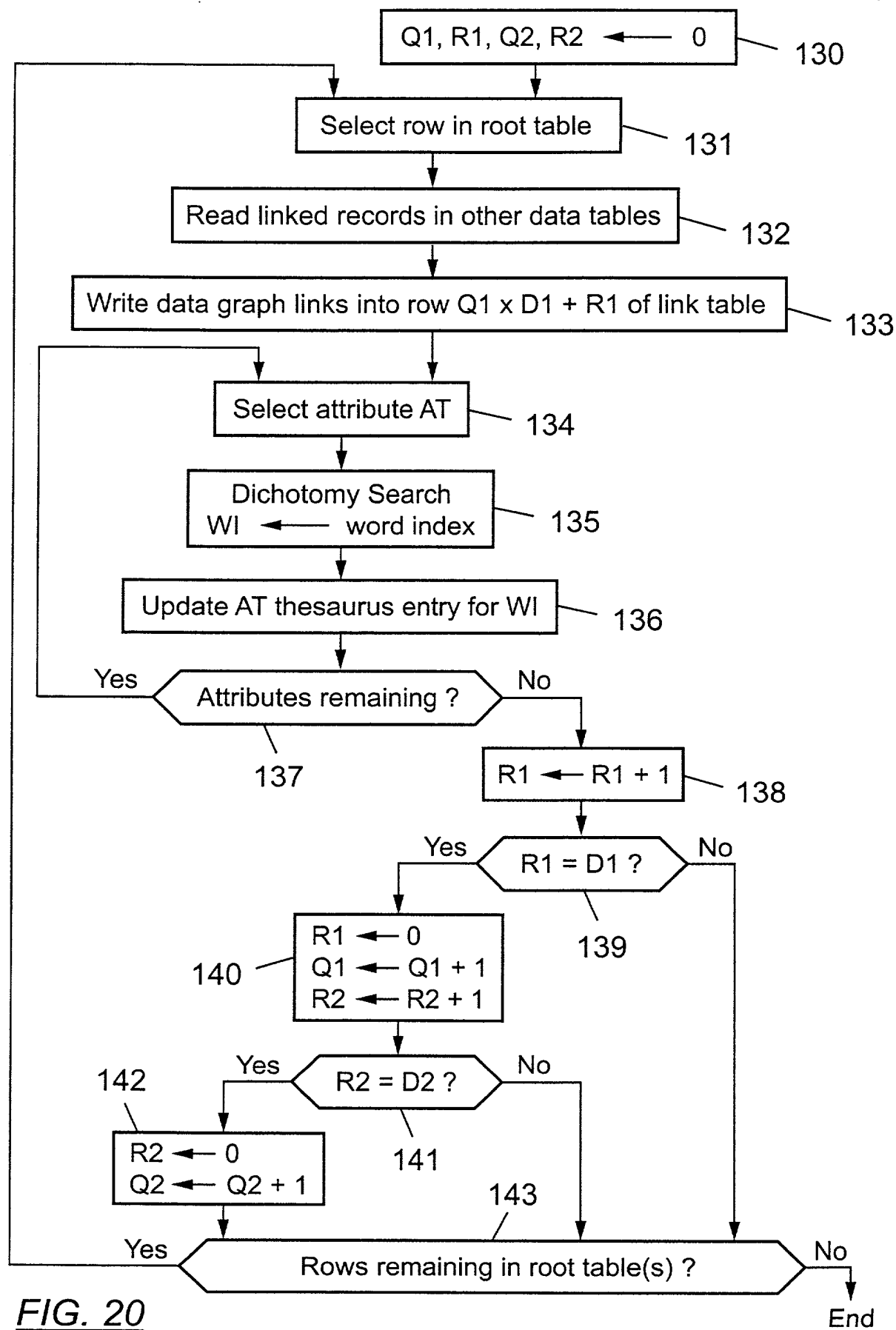


FIG. 17

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FIG. 18FIG. 19

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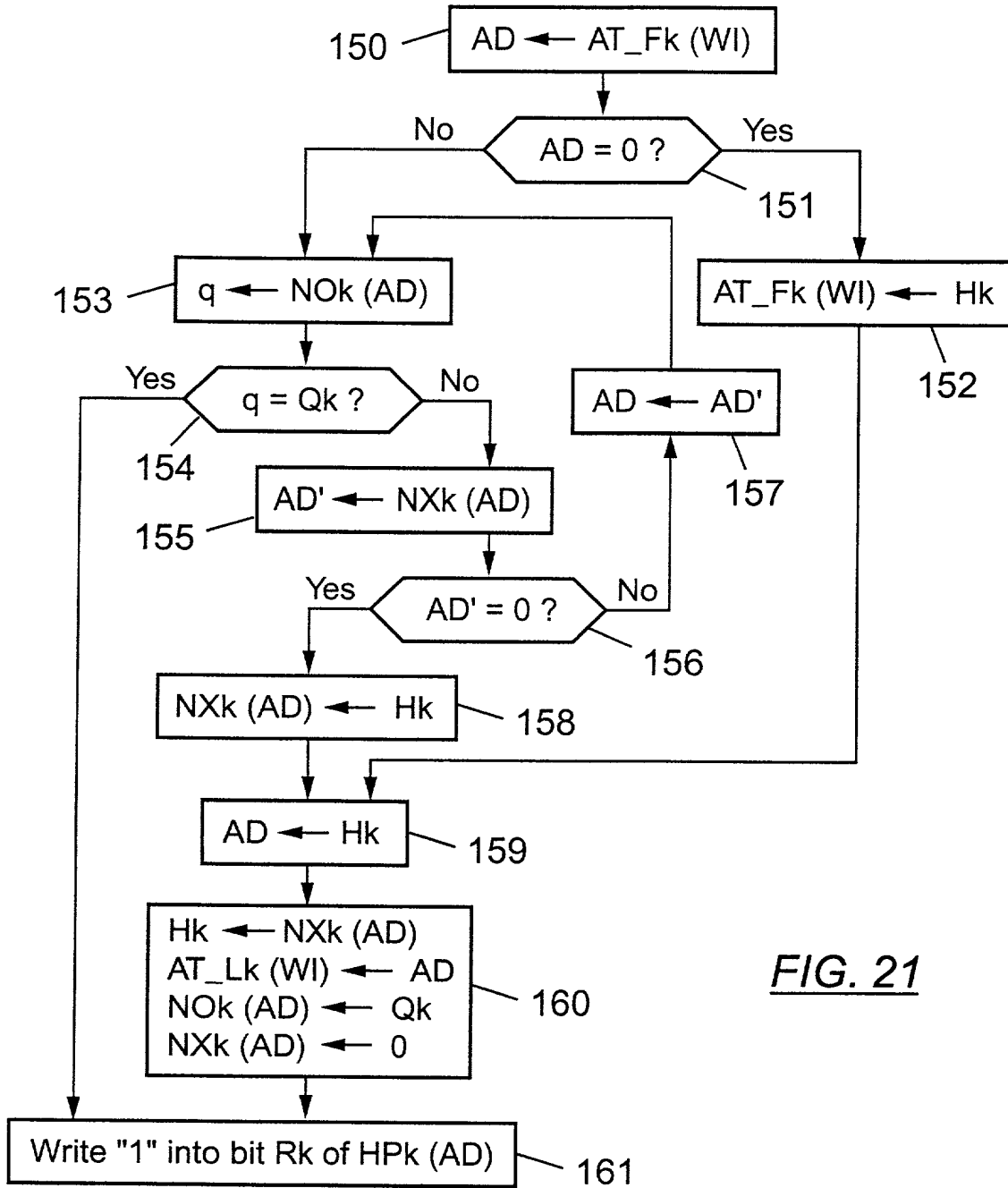


FIG. 21

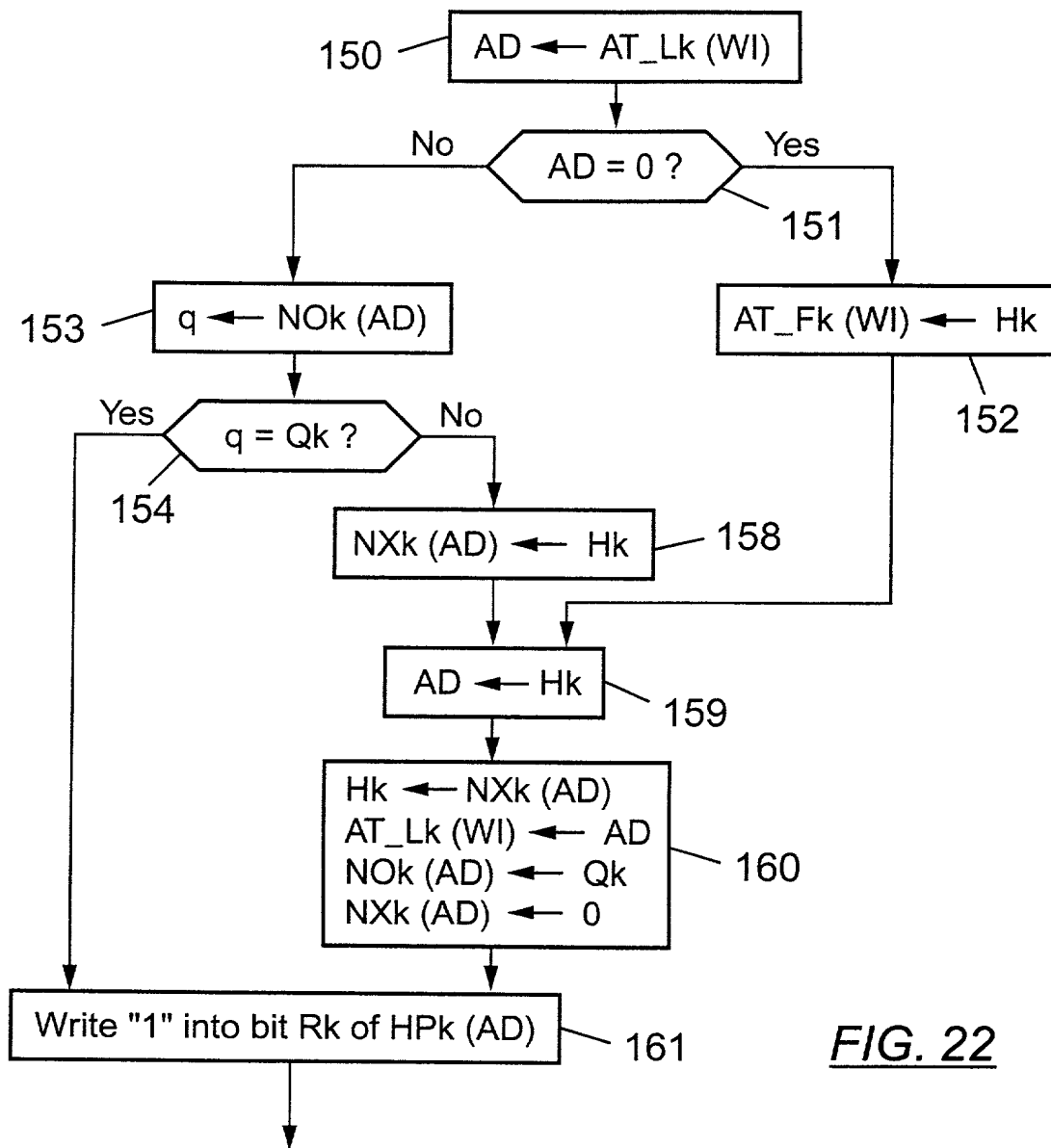


FIG. 22

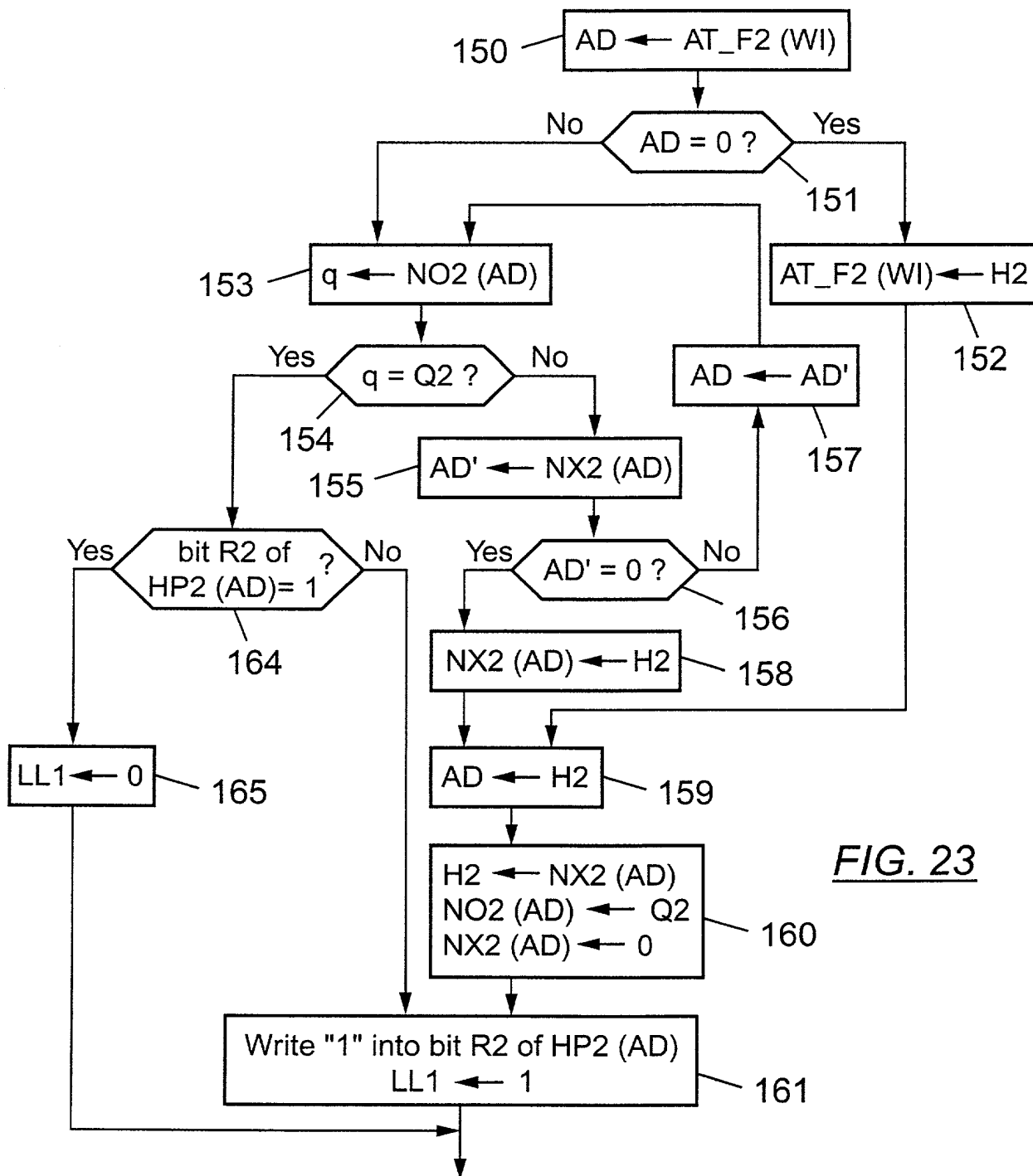


FIG. 23

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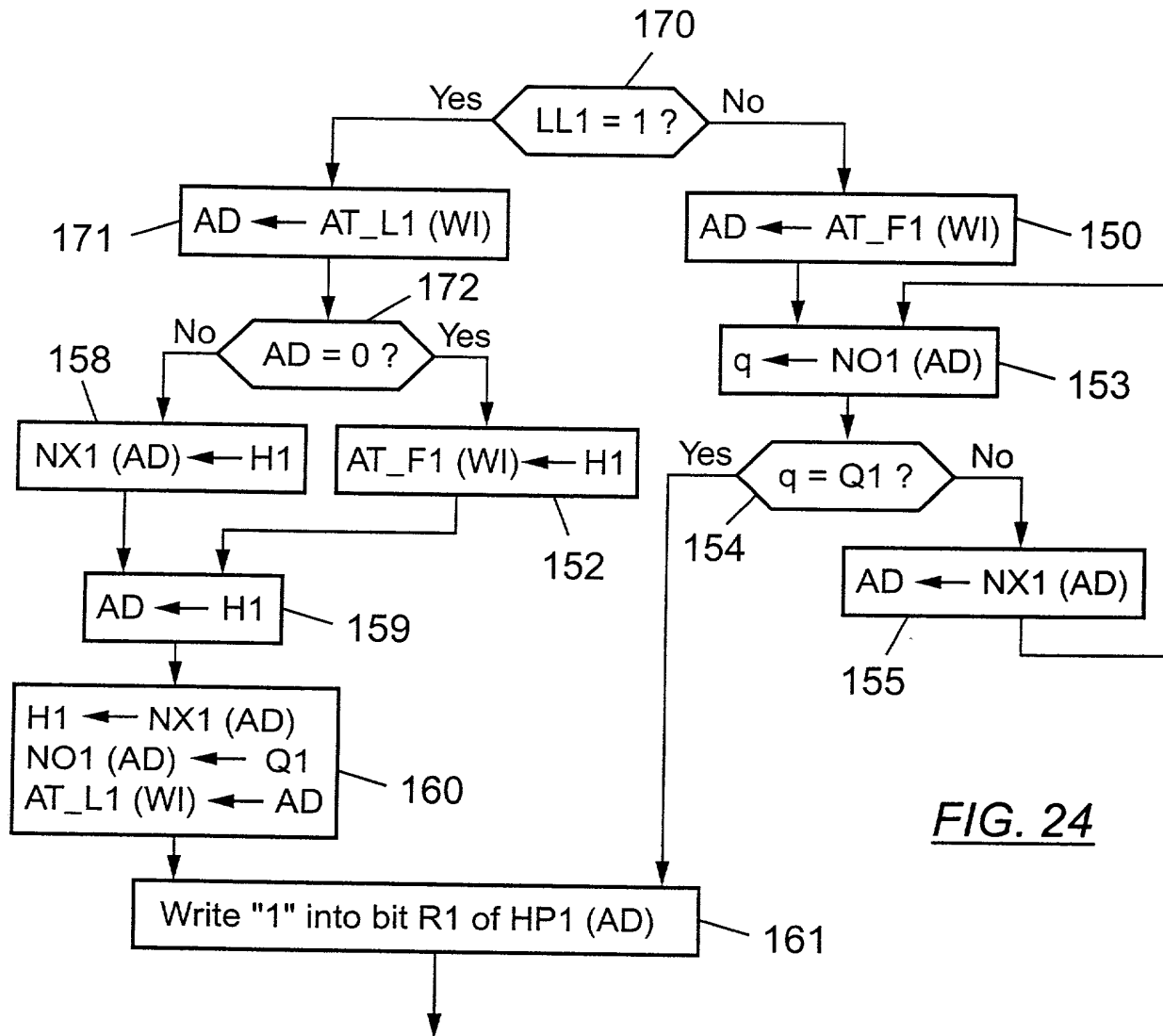


FIG. 24

CLIENT NAME THESAURUS

Row-ID	Name	Word Index	Format
0	Null	0	1
1	André	1	1
2	Ariane	2	1
3	Laure	3	1
4	Max	4	1
5	Oscar	5	1

FIG. 25ACCIDENT AMOUNT THESAURUS

Row-ID	Amount	Word Index	Format
0	Null	0	1
1	300	1	1
2	800	2	1
3	1 000	3	1
4	1 300	4	1
5	2 200	5	1
6	6 000	6	1
7	10 000	7	1

FIG. 26ACC. AMOUNT. MACROWORD (/ 3) THESAURUS

Row-ID	Prefix	Macro Index	First Word	Format
0	0	0	1	1
1	1	1	3	1
2	2	2	5	1
3	6	3	6	1
4	10	4	7	1

FIG. 27

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CLIENT NAME AUXILIARY TABLE

Row-ID	CN_F1	CN_L1	CN_F2
0	0	0	0
1	1	3	1
2	4	5	3
3	6	7	5
4	8	10	7
5	11	11	9

FIG. 28

ACCIDENT AMOUNT AUXILIARY TABLE

Row-ID	AA_F1	AA_L1	AA_F2
0	12	12	10
1	13	13	11
2	14	15	12
3	16	17	14
4	18	18	16
5	19	19	17
6	20	20	18
7	21	21	19

FIG. 29

ACC. AMOUNT. MACROWORD (/ 3) AUXILIARY TABLE

Row-ID	AA_3_F1	AA_3_L1	AA_3_F2
0	22	24	20
1	25	26	22
2	27	27	24
3	28	28	25
4	29	29	26

FIG. 30

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AD	NO1	NX1	HP1
1	0	2	100
2	1	3	100
3	2	0	001
4	0	5	010
5	2	0	110
6	1	7	001
7	3	0	010
8	0	9	001
9	2	10	010
10	3	0	100
11	3	0	001
12	3	0	111
13	1	0	010
14	0	15	001
15	2	0	001
16	0	17	100
17	2	0	100
18	1	0	100
19	1	0	001
20	2	0	010
21	0	0	010
22	0	23	001
23	1	24	010
24	2	0	001
25	1	26	100
26	2	0	100
27	1	0	001
28	2	0	010
29	0	0	010
30	x	31	000
31	x	32	000
32	x	33	000
33	x	0	000

FIG. 31

AD	NO2	NX2	HP2
1	0	2	11
2	1	0	10
3	0	4	10
4	1	0	10
5	0	6	01
6	1	0	01
7	0	8	10
8	1	0	11
9	1	0	01
10	1	0	01
11	0	0	01
12	0	13	10
13	1	0	10
14	0	15	10
15	1	16	10
16	0	17	01
17	0	18	01
18	1	19	10
19	0	20	10
20	0	21	11
21	1	0	10
22	0	23	01
23	1	0	10
24	0	0	01
25	1	0	10
26	0	0	10
27	x	28	00
28	x	29	00
29	x	30	00
30	x	0	00

FIG. 32

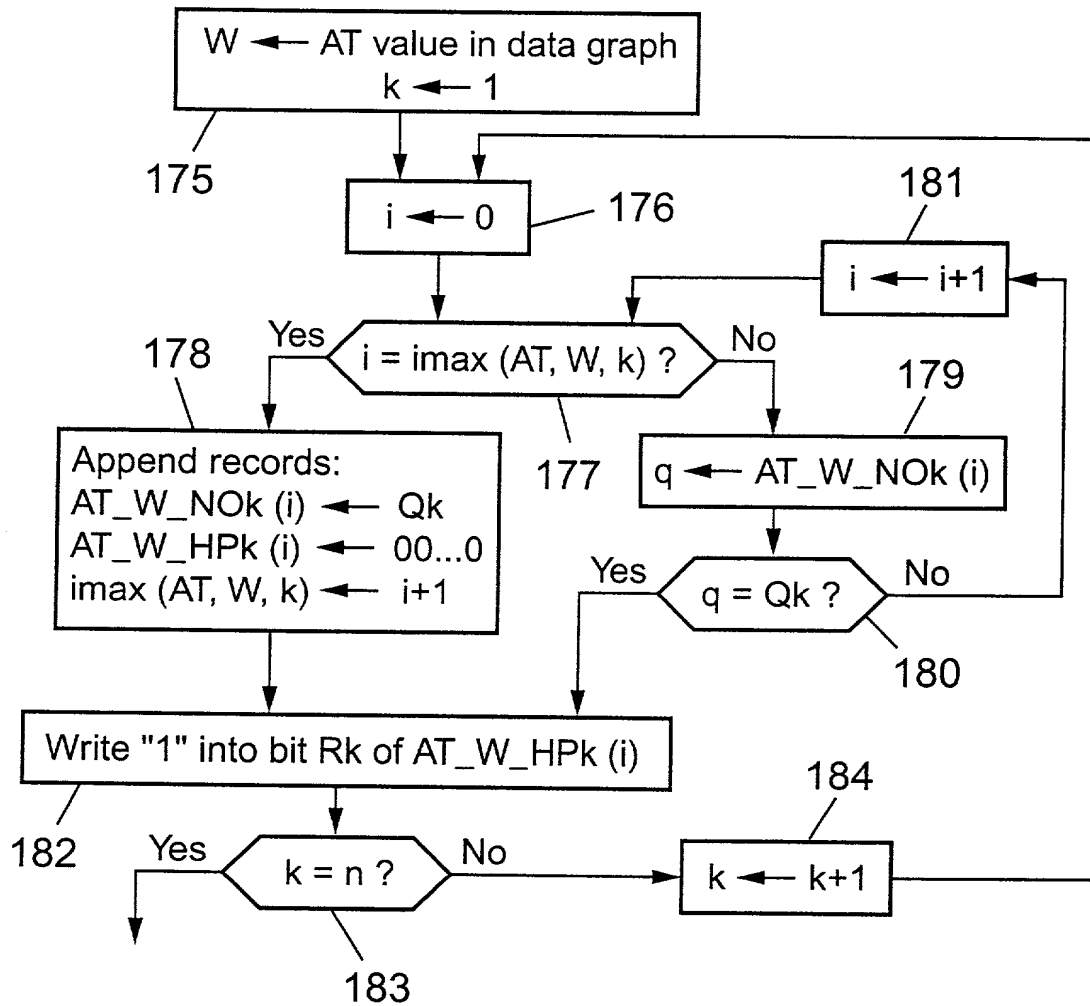


FIG. 33

AD	NO2	NX2	HP2	F1
1	0	2	11	1
2	1	0	10	3
3	0	4	10	4
4	1	0	10	5
5	0	6	01	6
6	1	0	01	7
7	0	8	10	8
8	1	0	11	9
9	1	0	01	11
10	1	0	01	12
11	0	0	01	13
12	0	13	10	14
13	1	0	10	15
14	0	15	10	16
15	1	16	10	17
16	0	17	01	18
17	0	18	01	19
18	1	19	10	20
19	0	20	10	21
20	0	21	11	22
21	1	0	10	24
22	0	23	01	25
23	1	0	10	26
24	0	0	01	27
25	1	0	10	28
26	0	0	10	29
27	x	28	00	x
28	x	29	00	x
29	x	30	00	x
30	x	0	00	x

FIG. 34A

AD	NX1	HP1
1	2	100
2	0	100
3	0	001
4	0	010
5	0	110
6	0	001
7	0	010
8	0	001
9	10	010
10	0	100
11	0	001
12	0	111
13	0	010
14	0	001
15	0	001
16	0	100
17	0	100
18	0	100
19	0	001
20	0	010
21	0	010
22	23	001
23	0	010
24	0	001
25	0	100
26	0	100
27	0	001
28	0	010
29	0	010
30	31	000
31	32	000
32	33	000
33	0	000

FIG. 34B

AD	NO2	NX2	F1
1	0	2	1
2	1	0	3
3	0	4	4
4	1	0	5
5	0	6	6
6	1	0	7
7	0	8	8
8	1	0	9
9	1	0	11
10	1	0	12
11	0	0	13
12	0	13	10
13	1	0	14
14	0	15	15
15	1	16	16
16	0	17	17
17	0	18	18
18	1	19	19
19	0	20	20
20	0	21	21
21	1	0	22
22	0	23	24
23	1	0	25
24	0	0	26
25	1	0	27
26	0	0	28
27	x	28	29
28	x	29	x
29	x	30	x
30	x	0	x

FIG. 34C

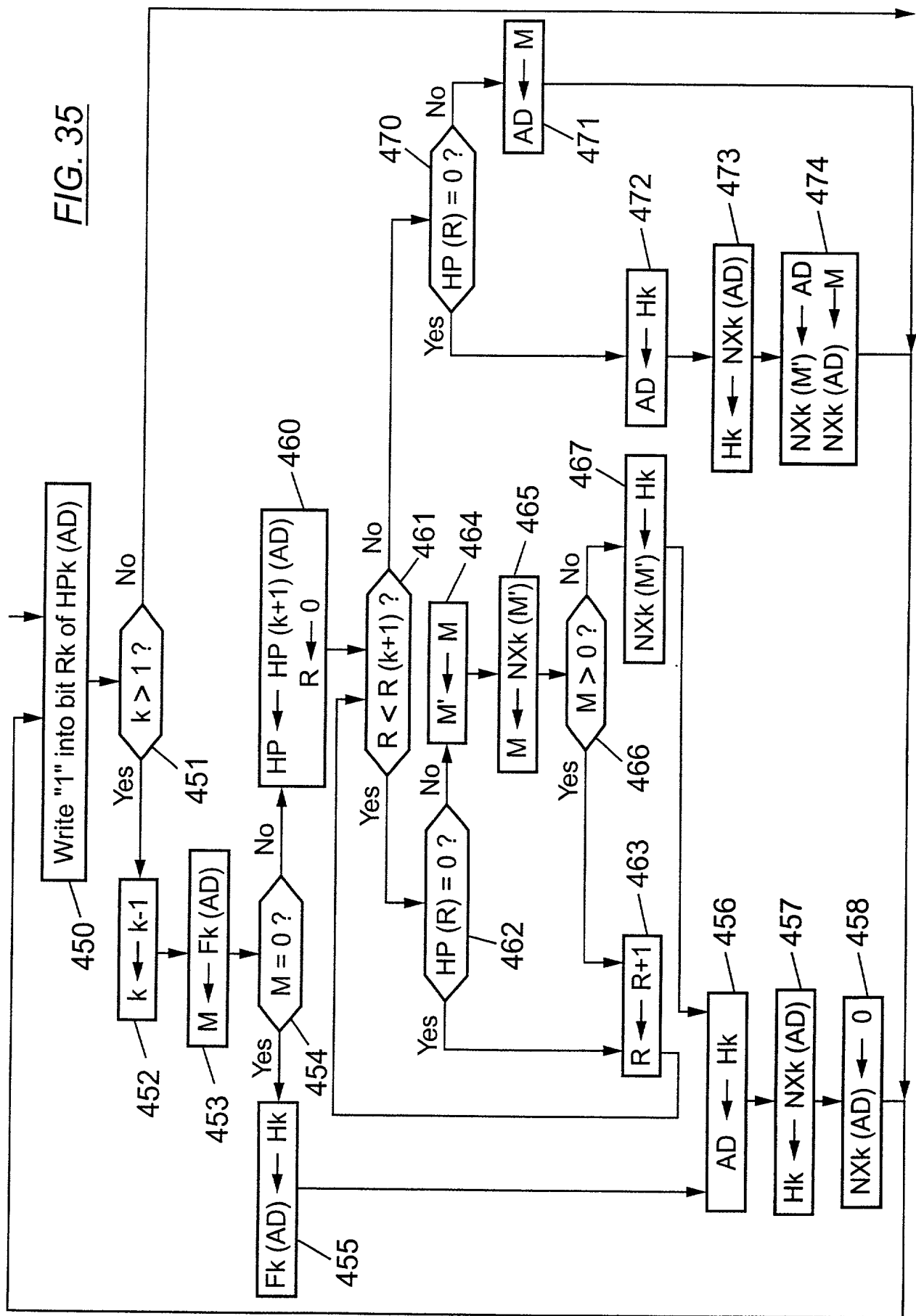
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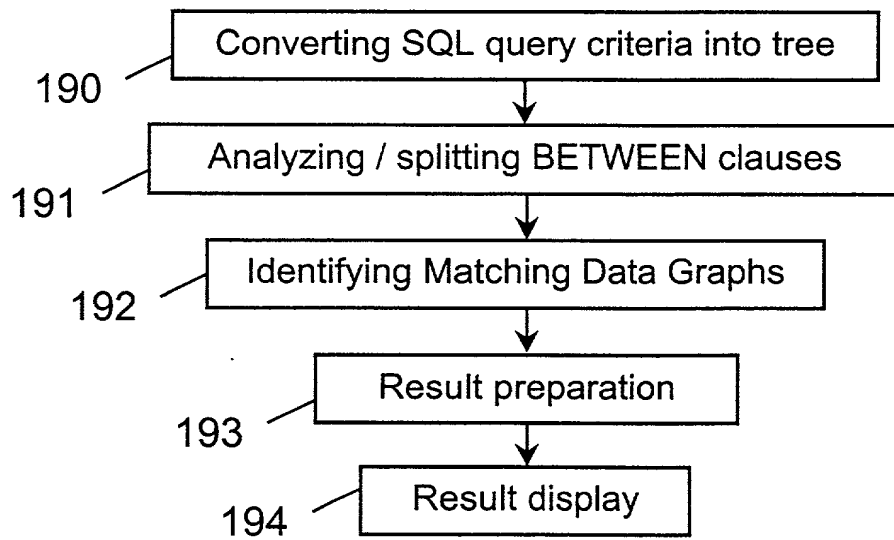
AD	R2	NX1	HP1
1	0	2	100
2	1	0	100
3	0	0	001
4	0	0	010
5	0	0	110
6	1	0	001
7	1	0	010
8	0	0	001
9	0	10	010
10	1	0	100
11	1	0	001
12	1	0	111
13	1	0	010
14	0	0	001
15	0	0	001
16	0	0	100
17	0	0	100
18	1	0	100
19	1	0	001
20	0	0	010
21	0	0	010
22	0	23	001
23	1	0	010
24	0	0	001
25	1	0	100
26	0	0	100
27	1	0	001
28	0	0	010
29	0	0	010
30	x	31	000
31	x	32	000
32	x	33	000
33	x	0	000

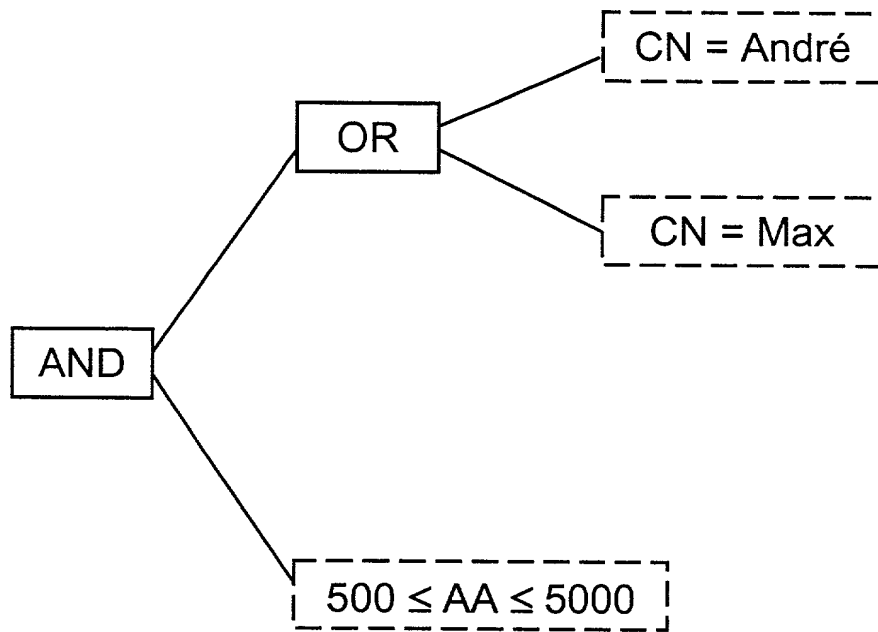
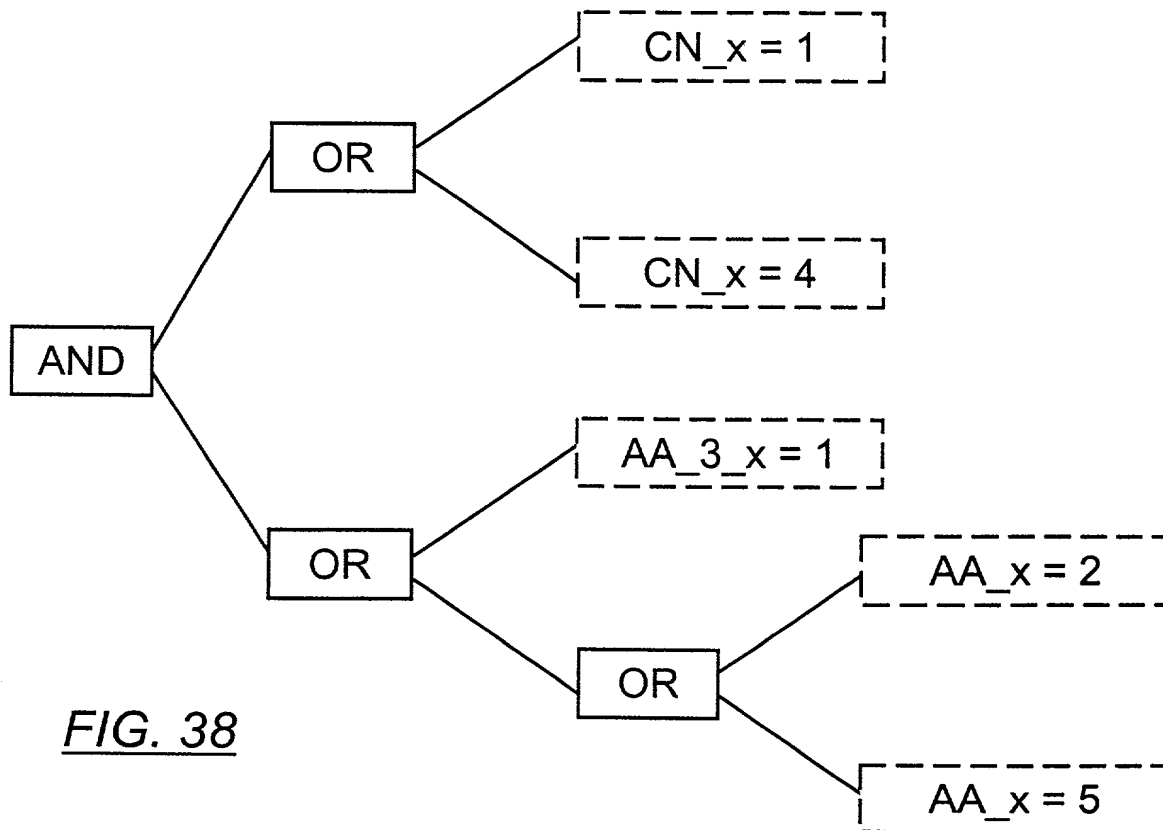
FIG. 34D

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FIG. 35



FIG. 36

FIG. 37FIG. 38

34157

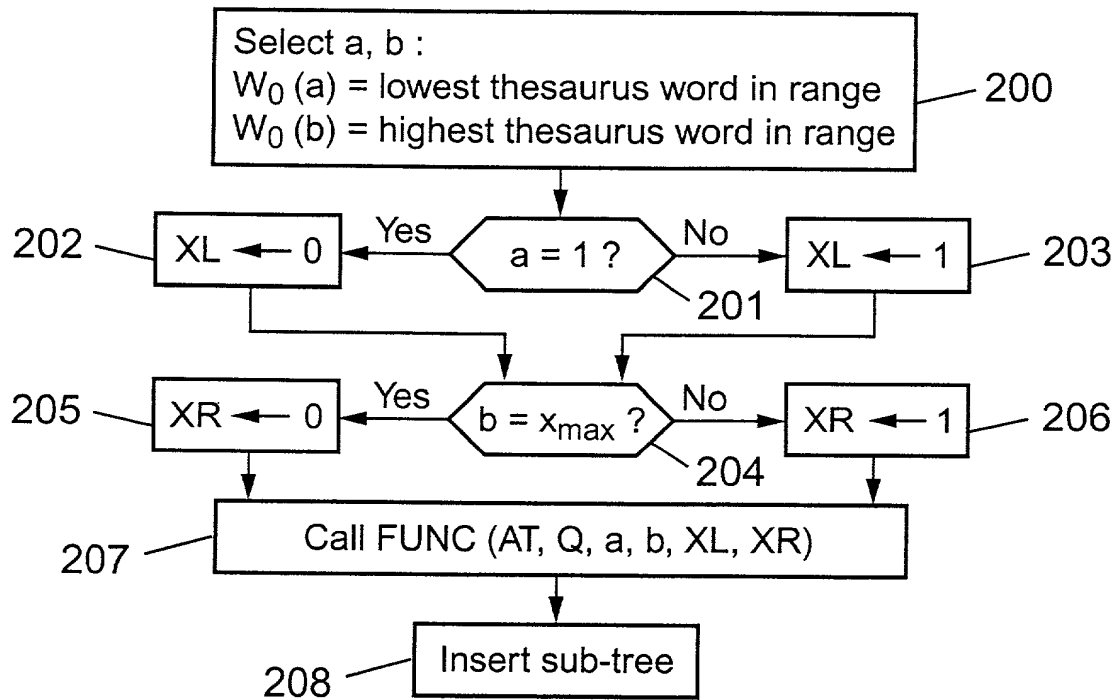


FIG. 39

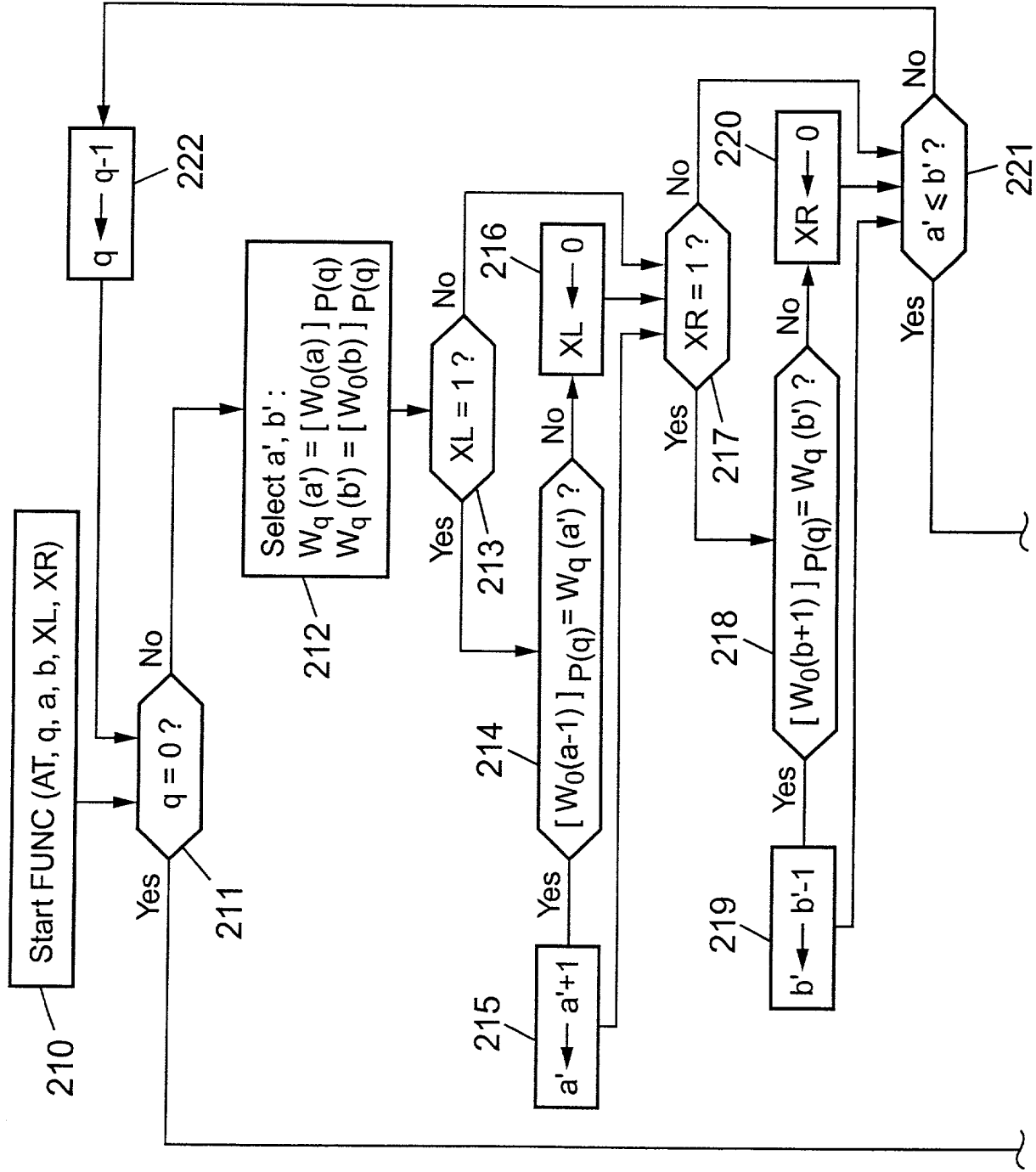


FIG. 40A

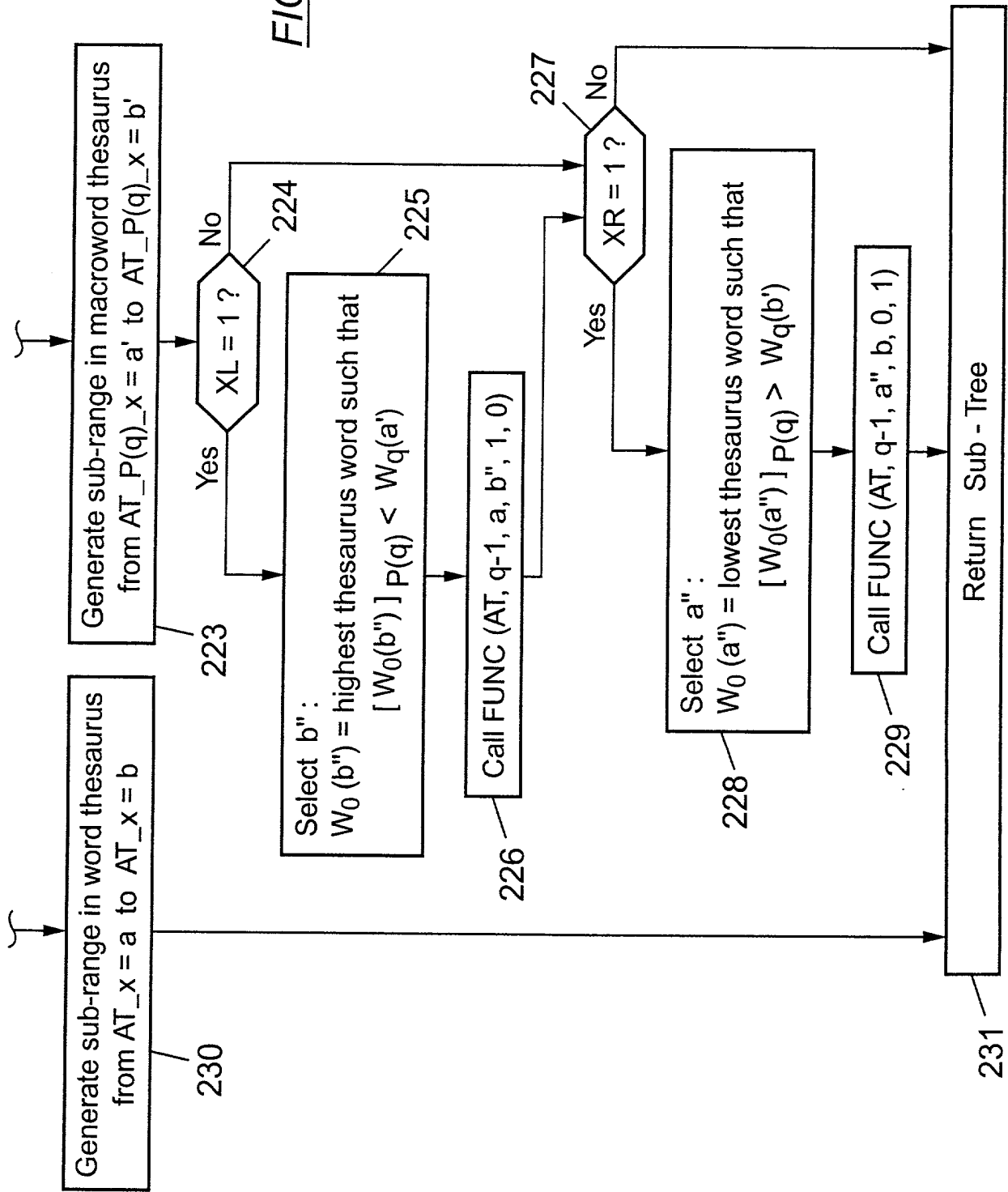


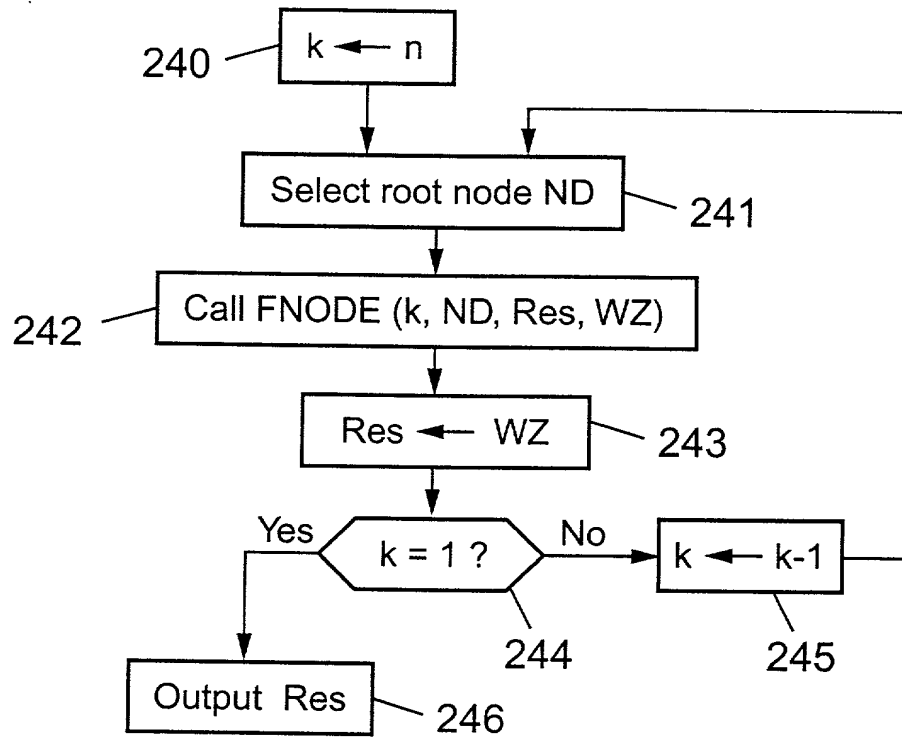
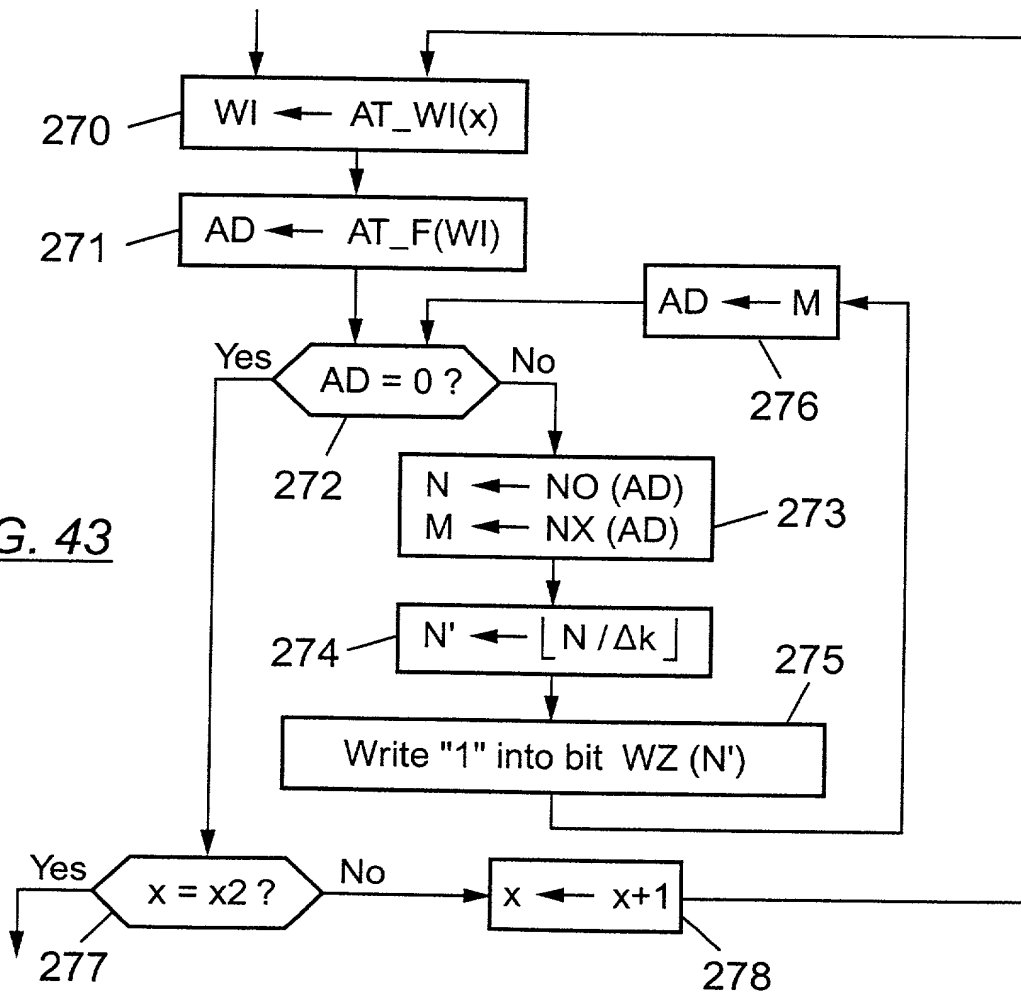
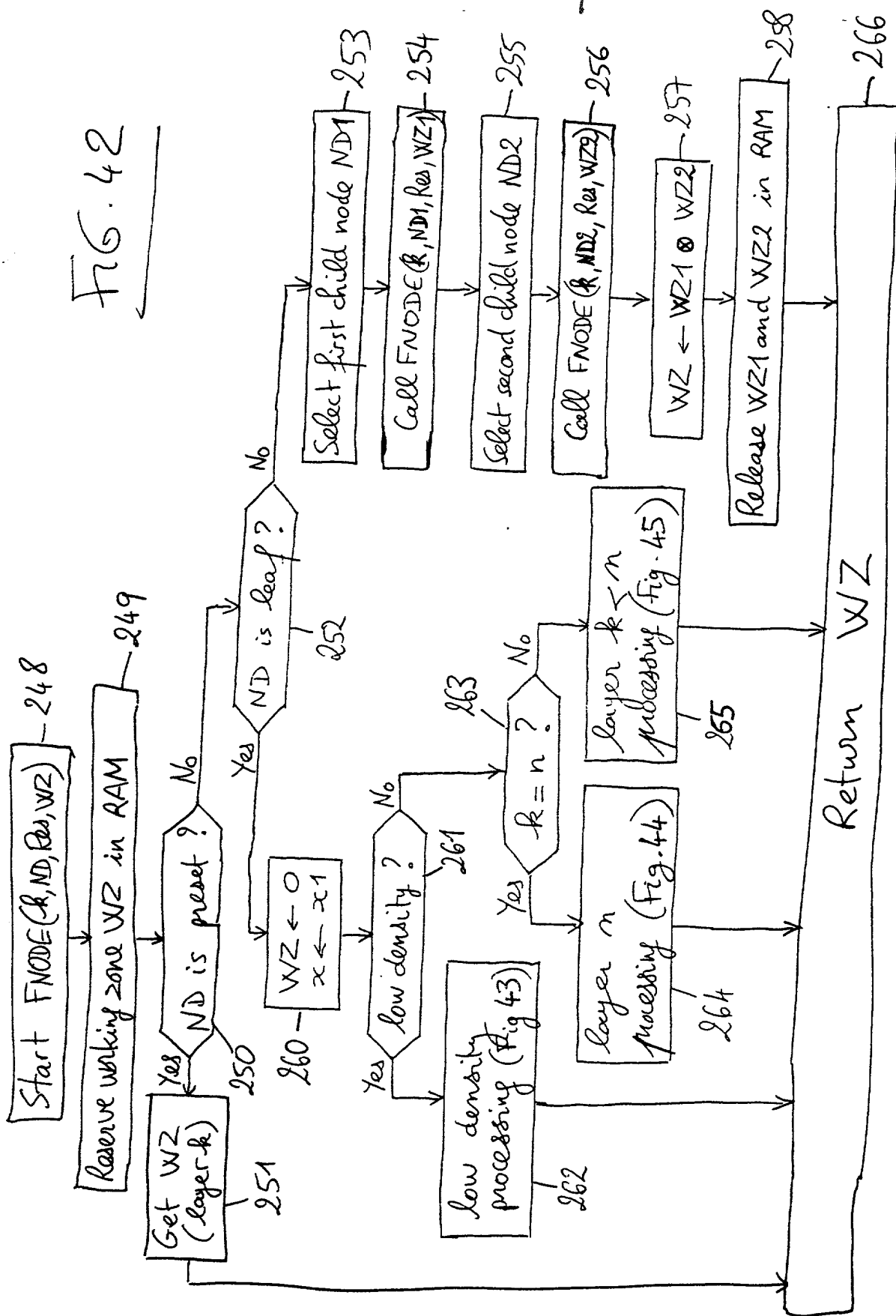
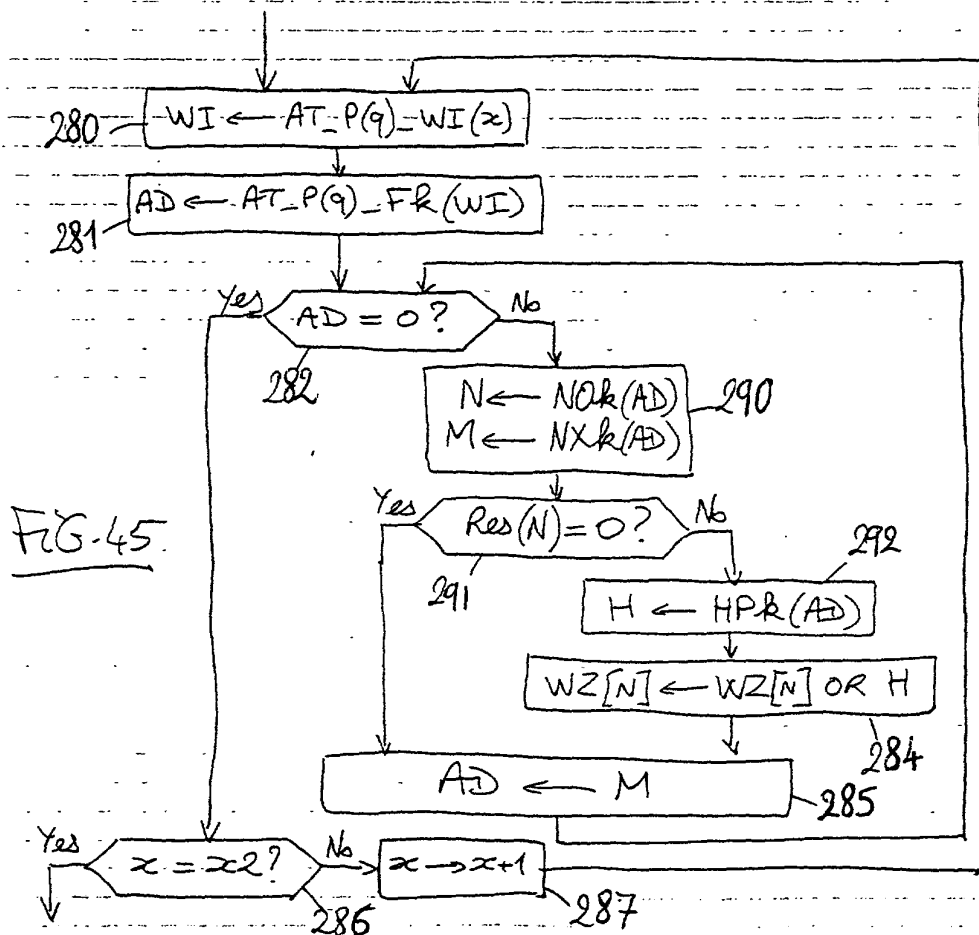
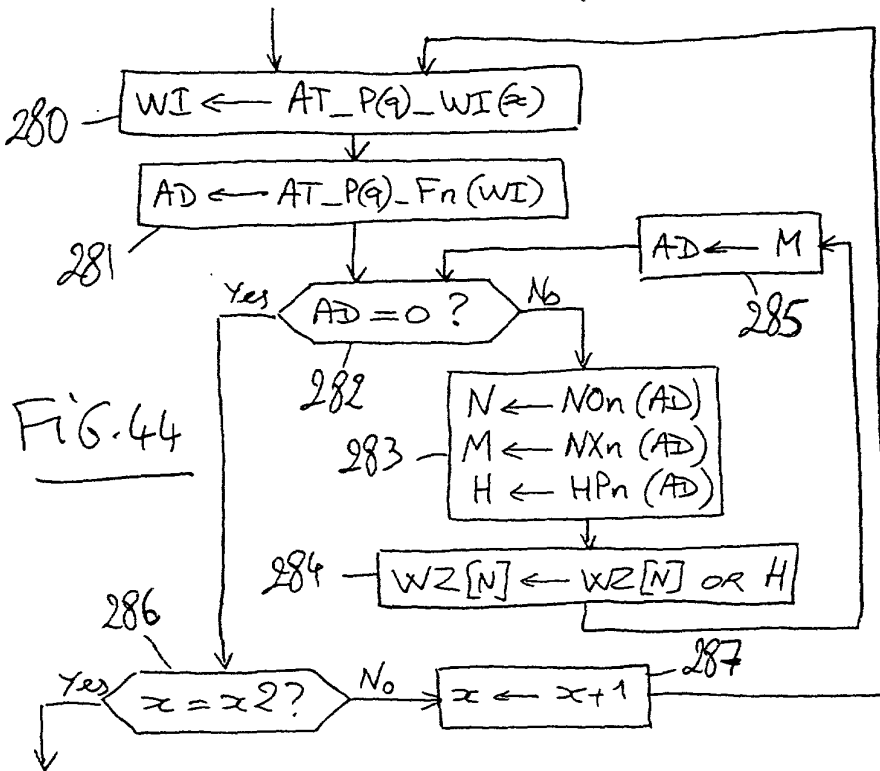
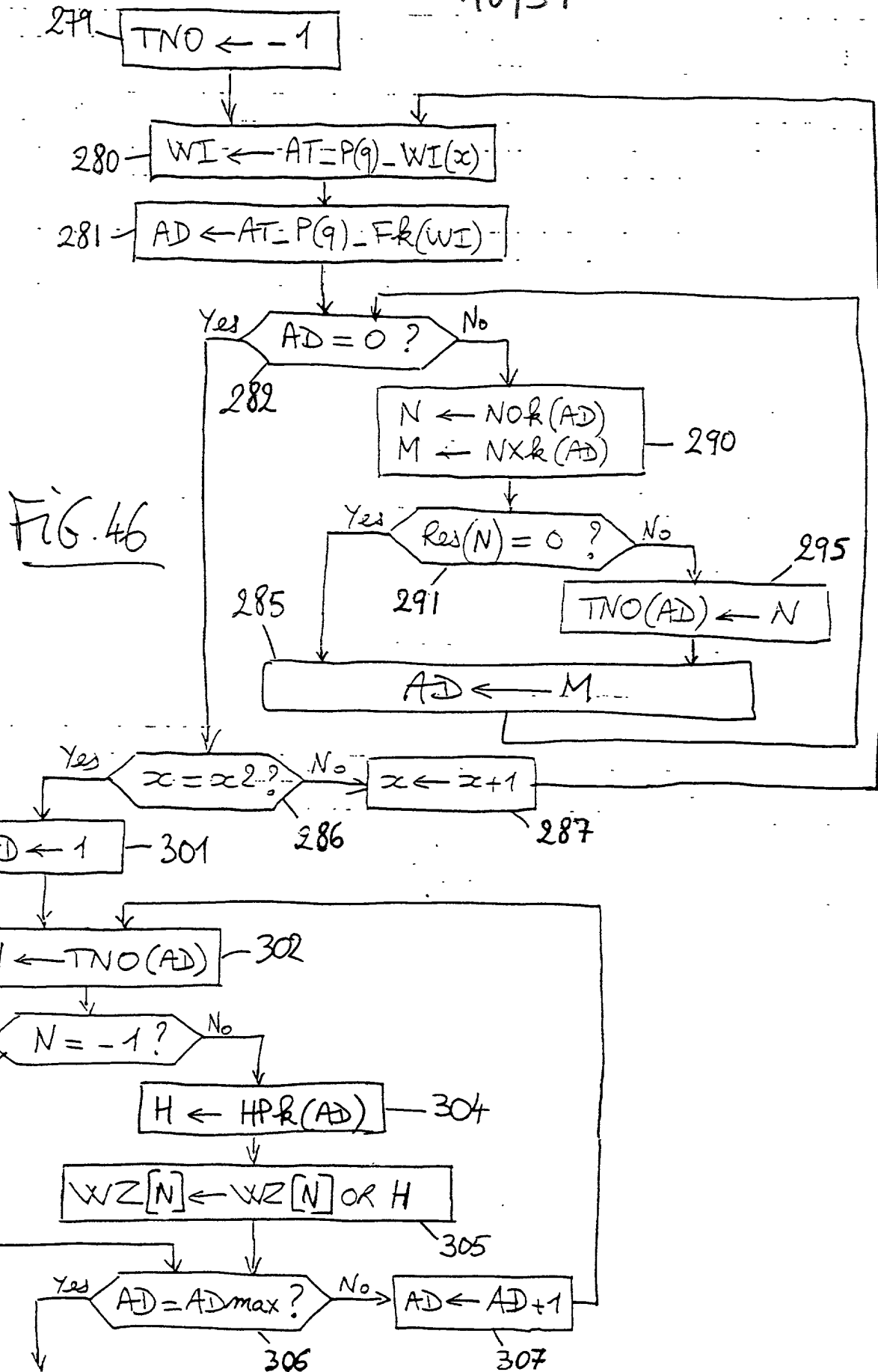
FIG. 41FIG. 43

FIG. 42

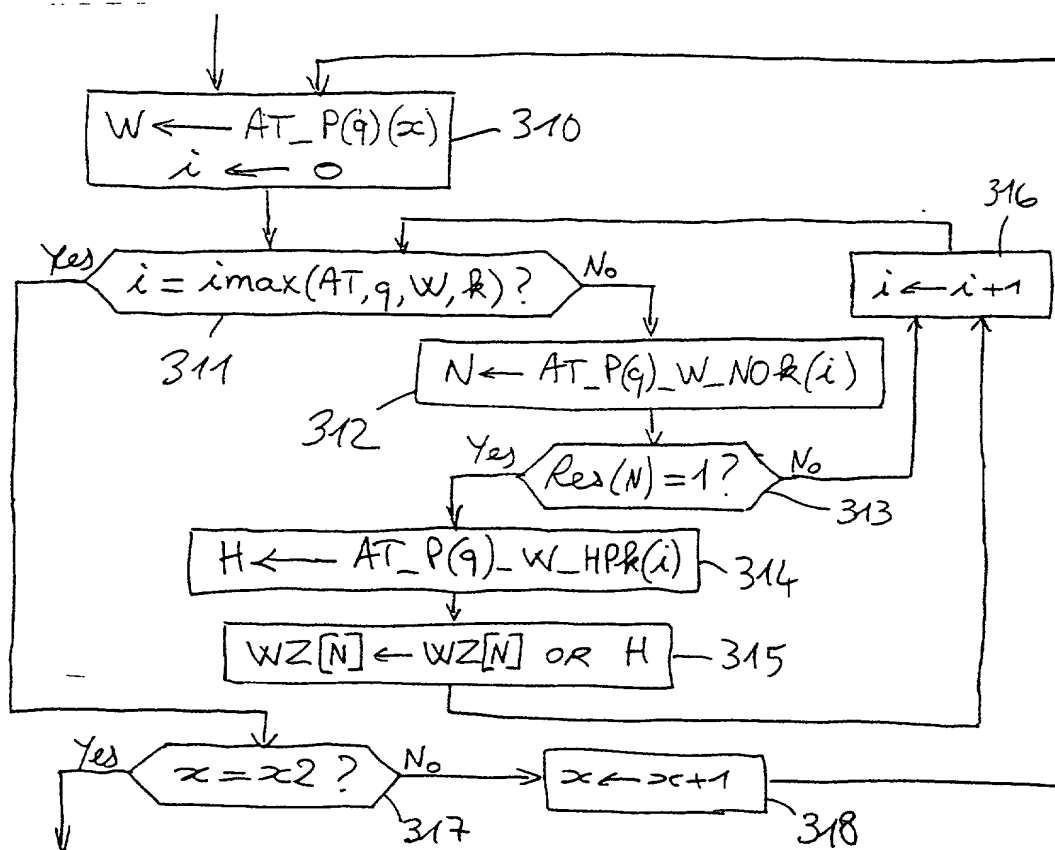
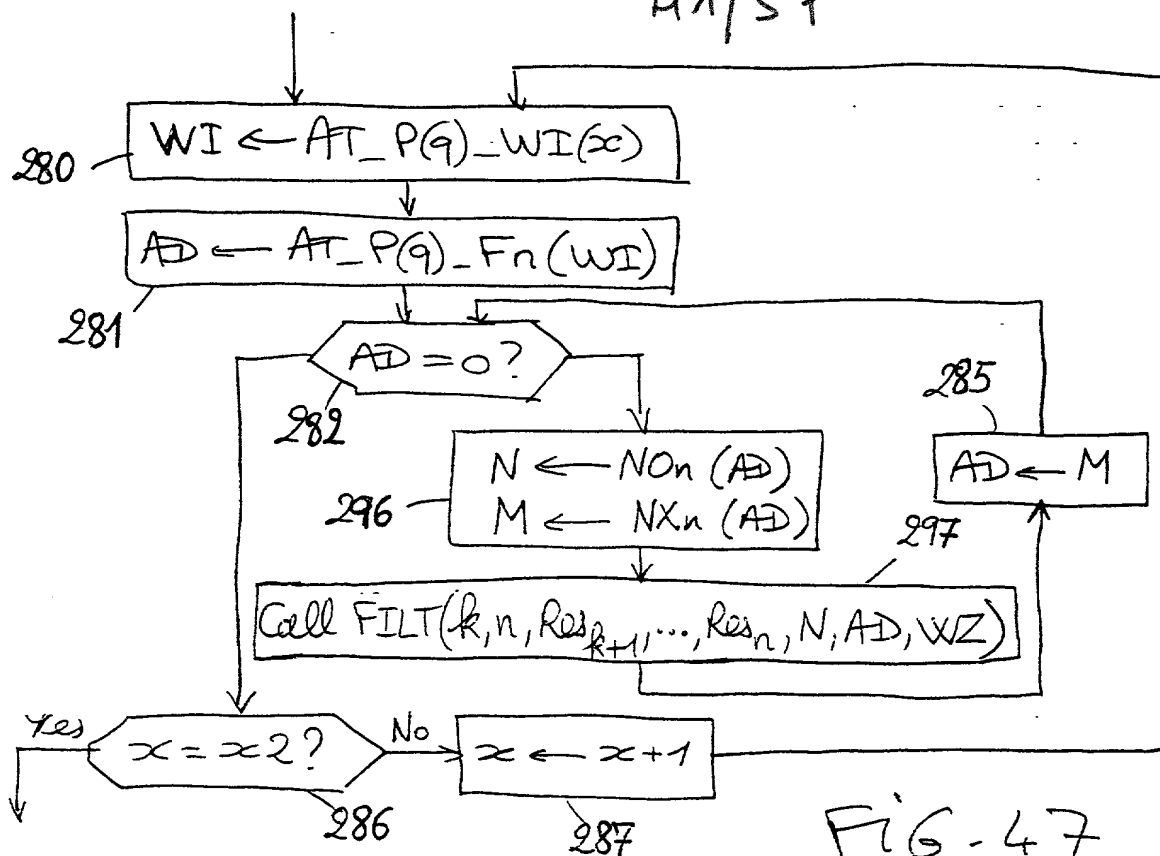


39157

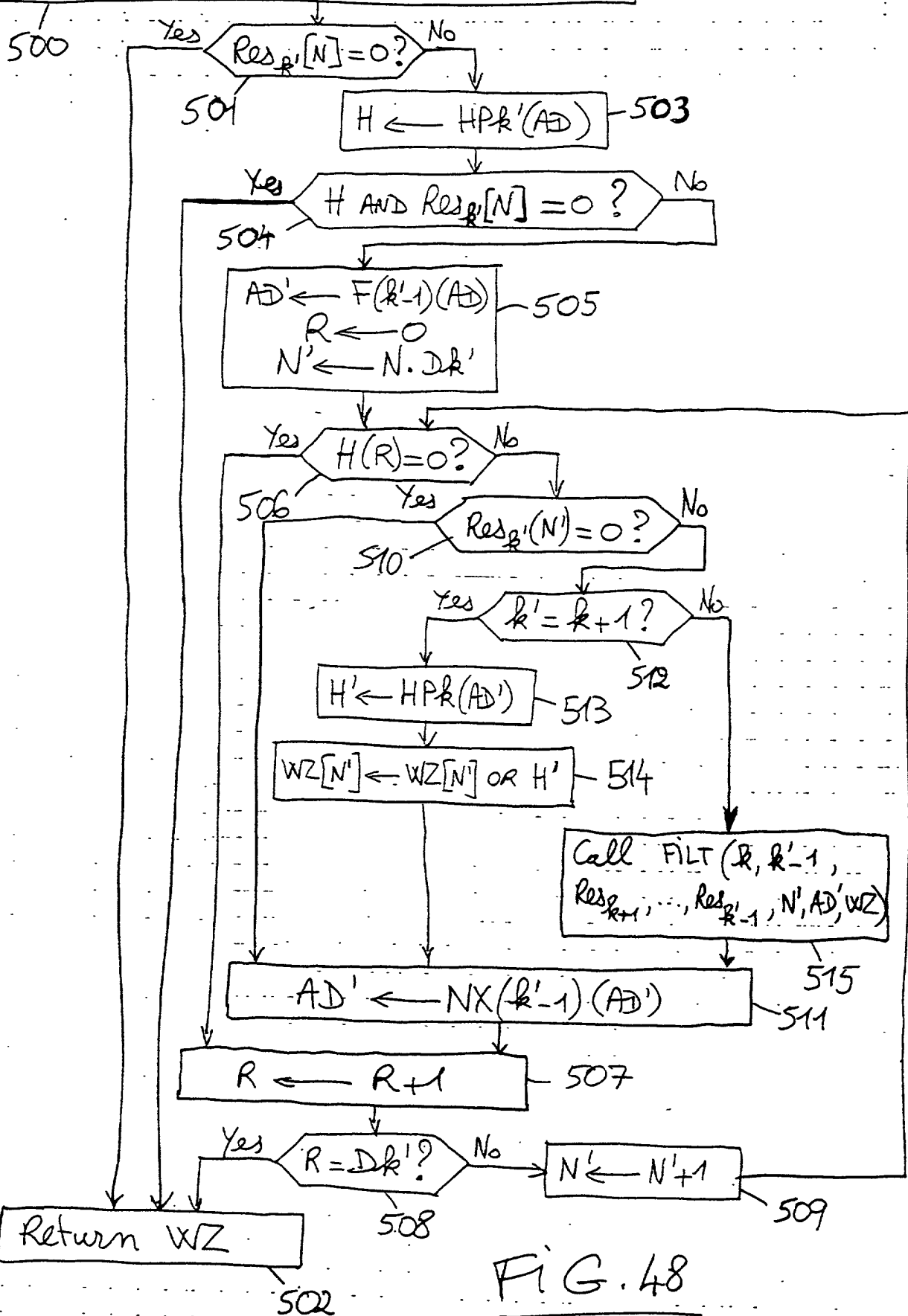




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Start $FILT(k, k', Res_{k+1}, \dots, Res_k, N, AD, WZ)$



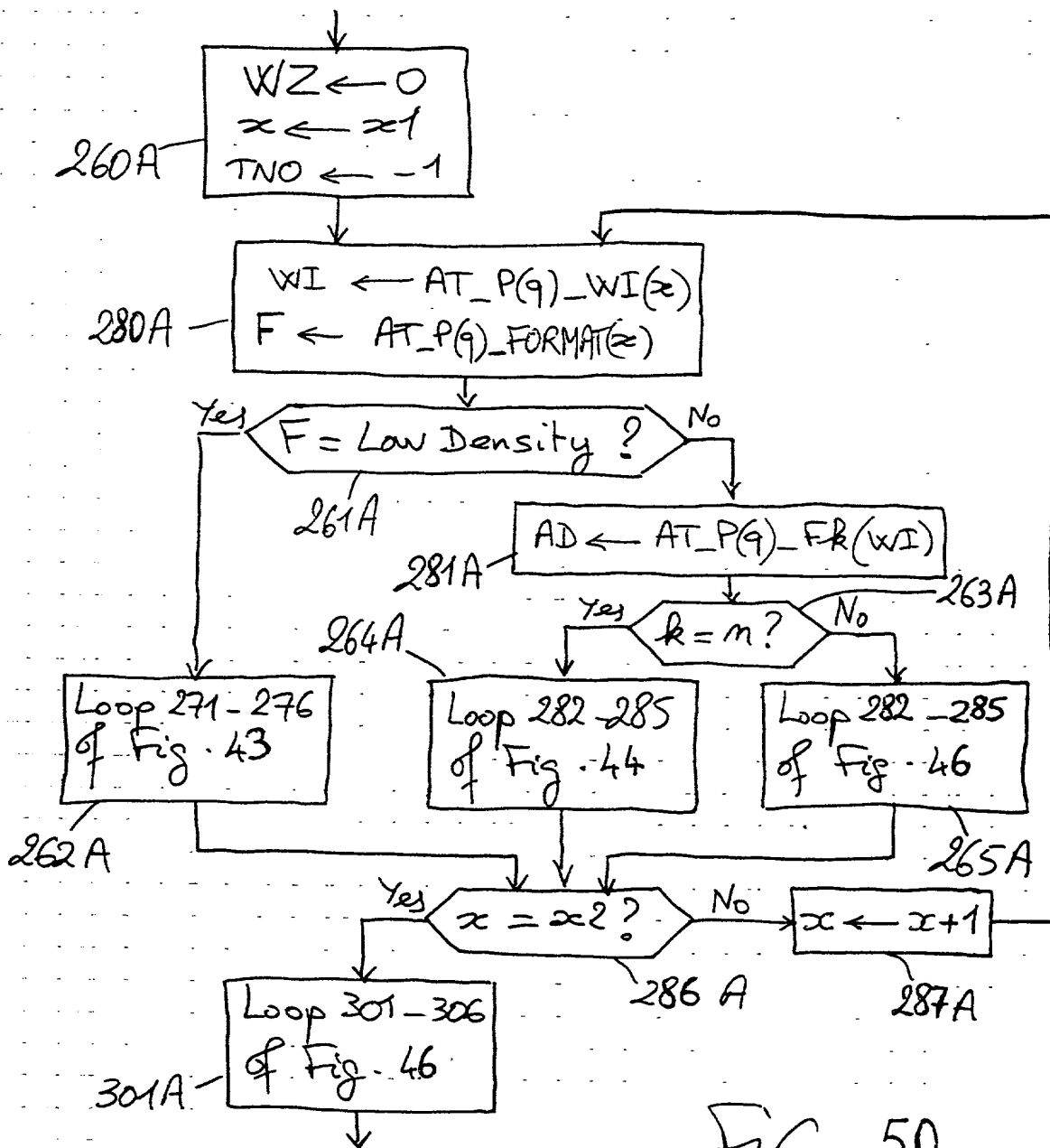


FIG. 50

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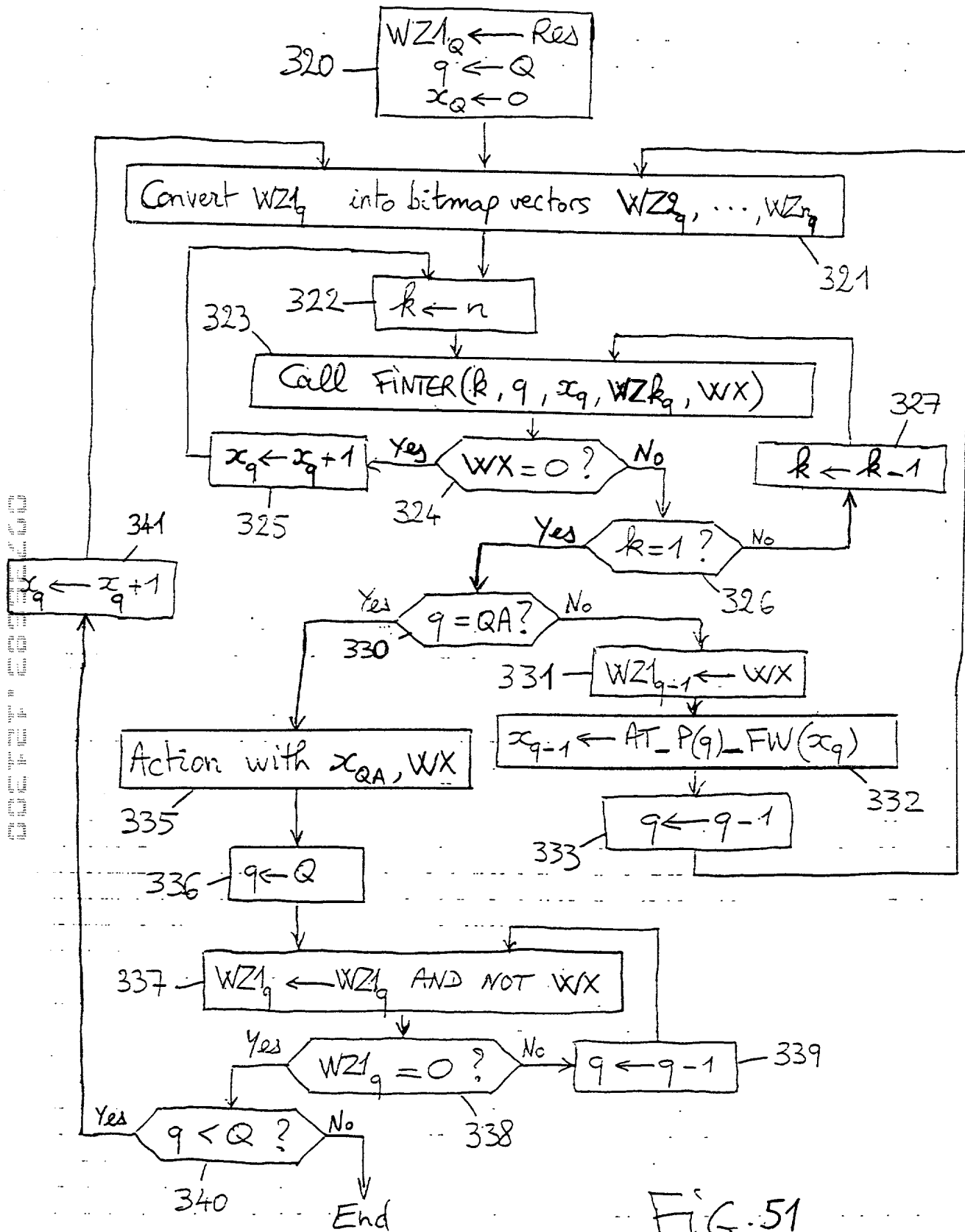
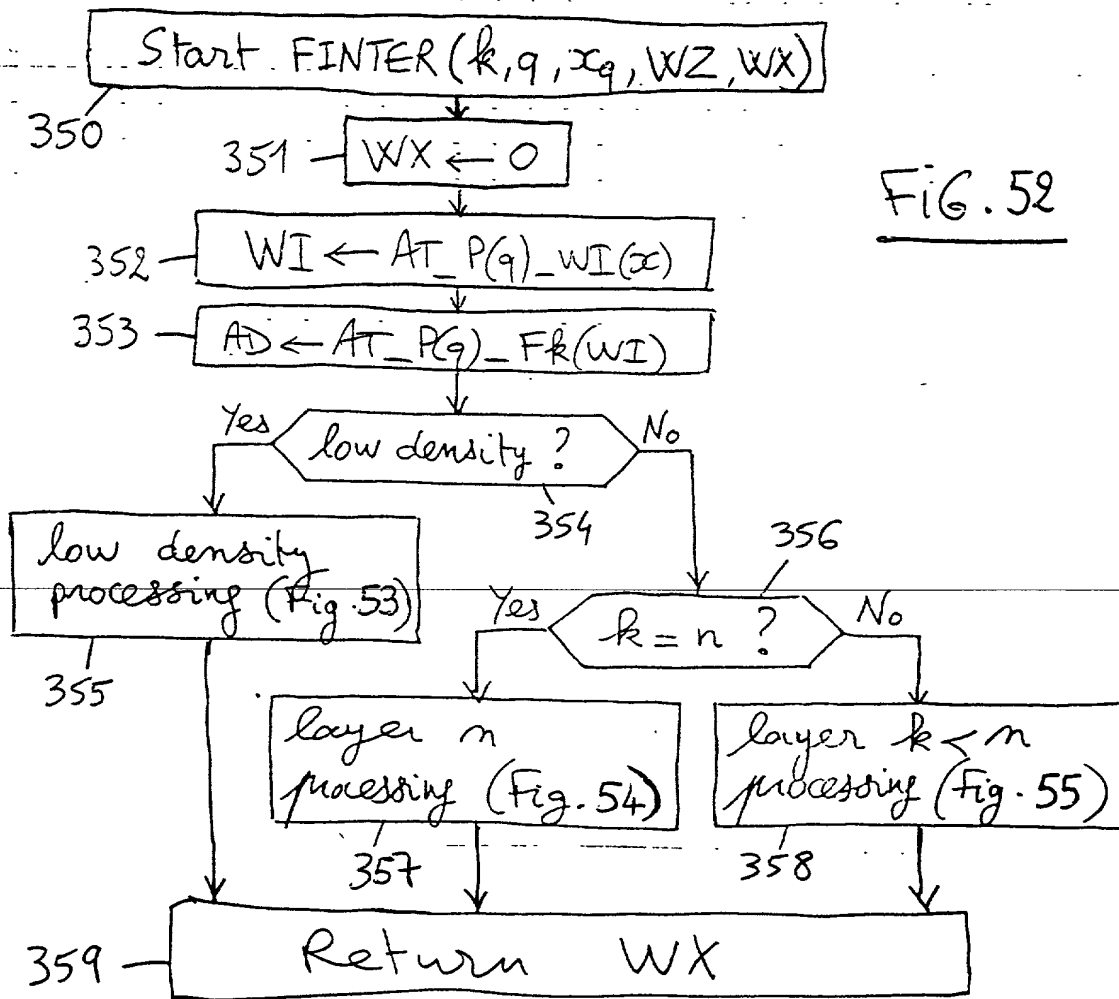


FIG. 51



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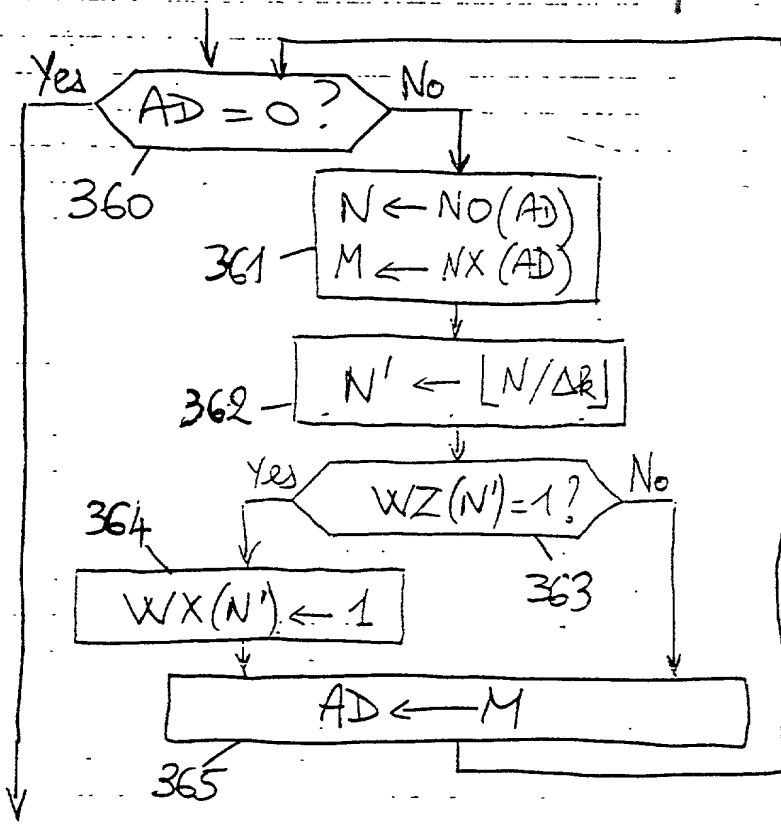


FIG. 53

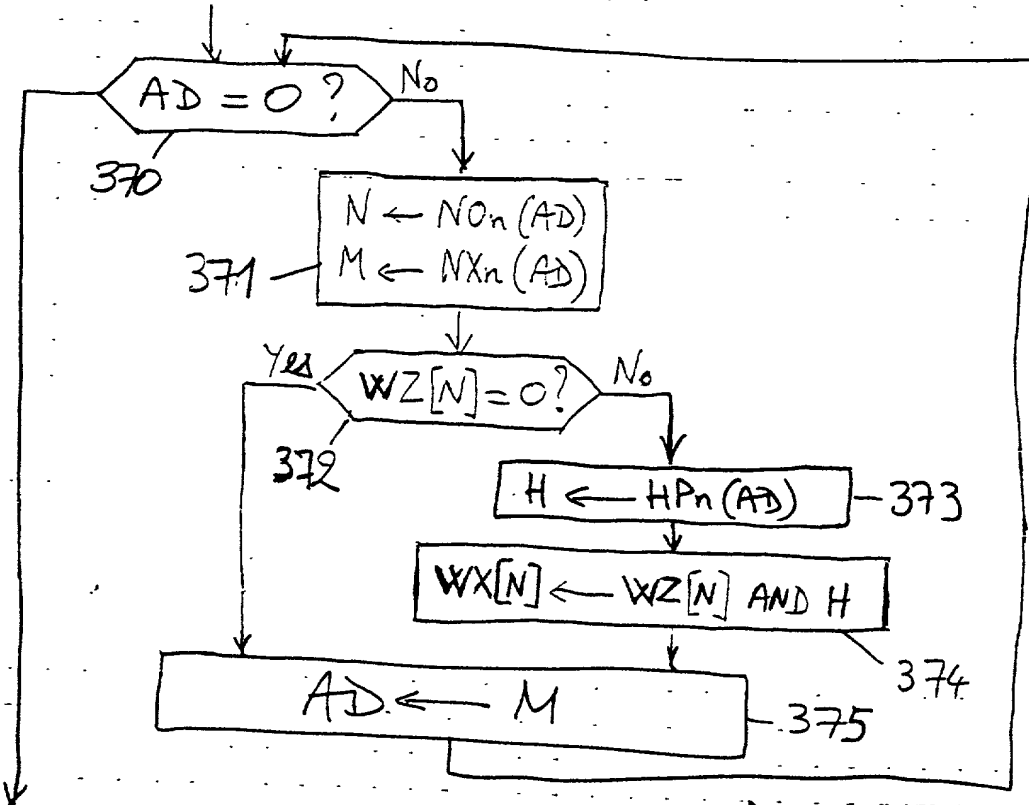


FIG. 54

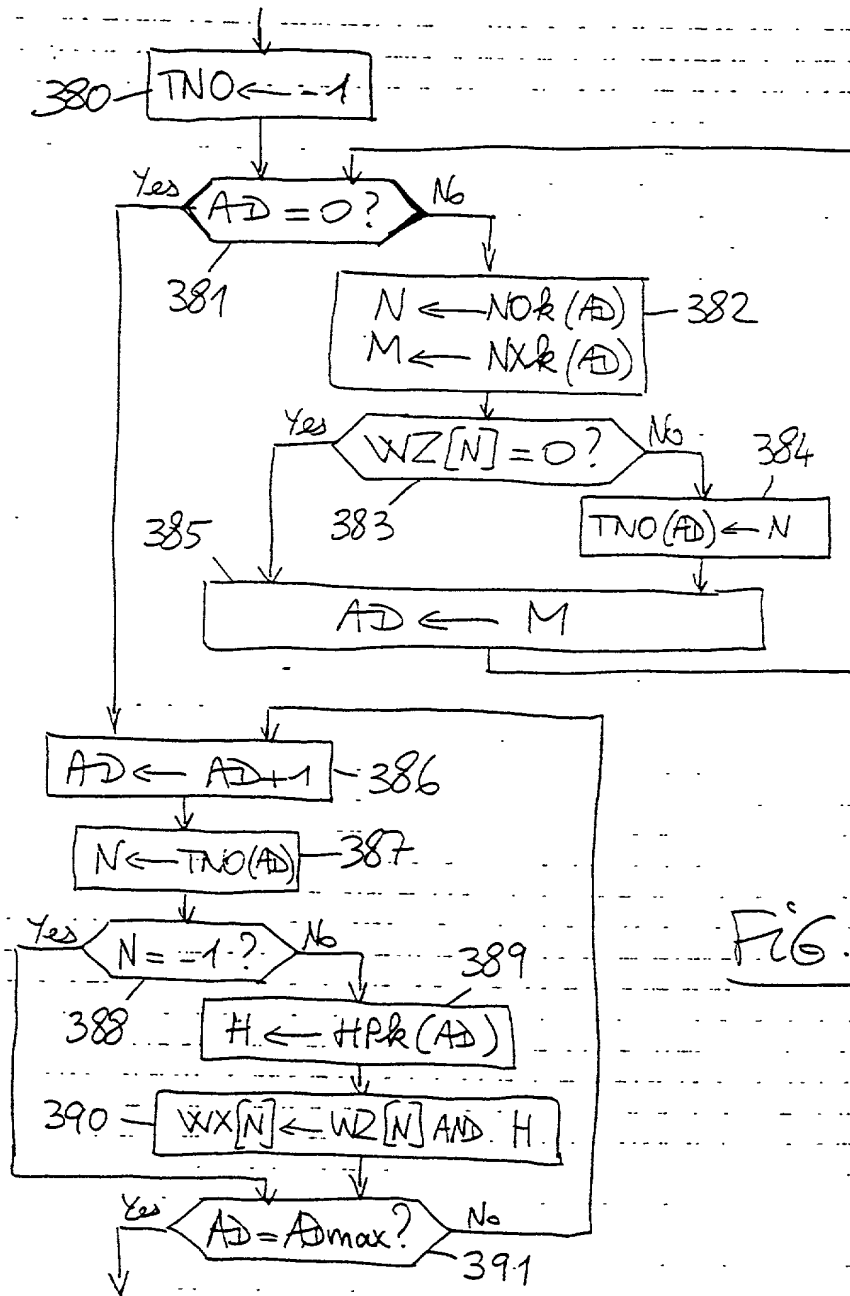


FIG. 55

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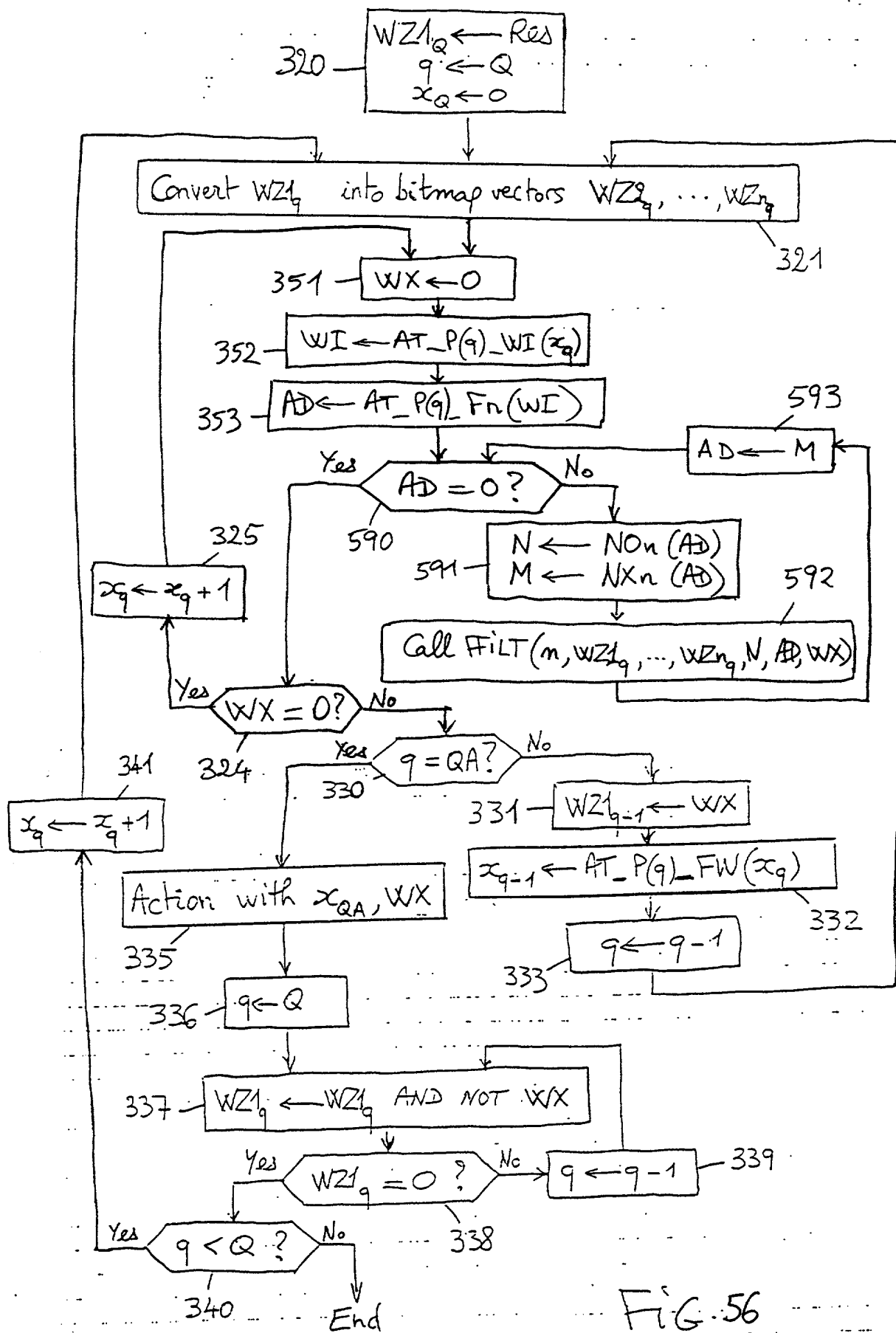
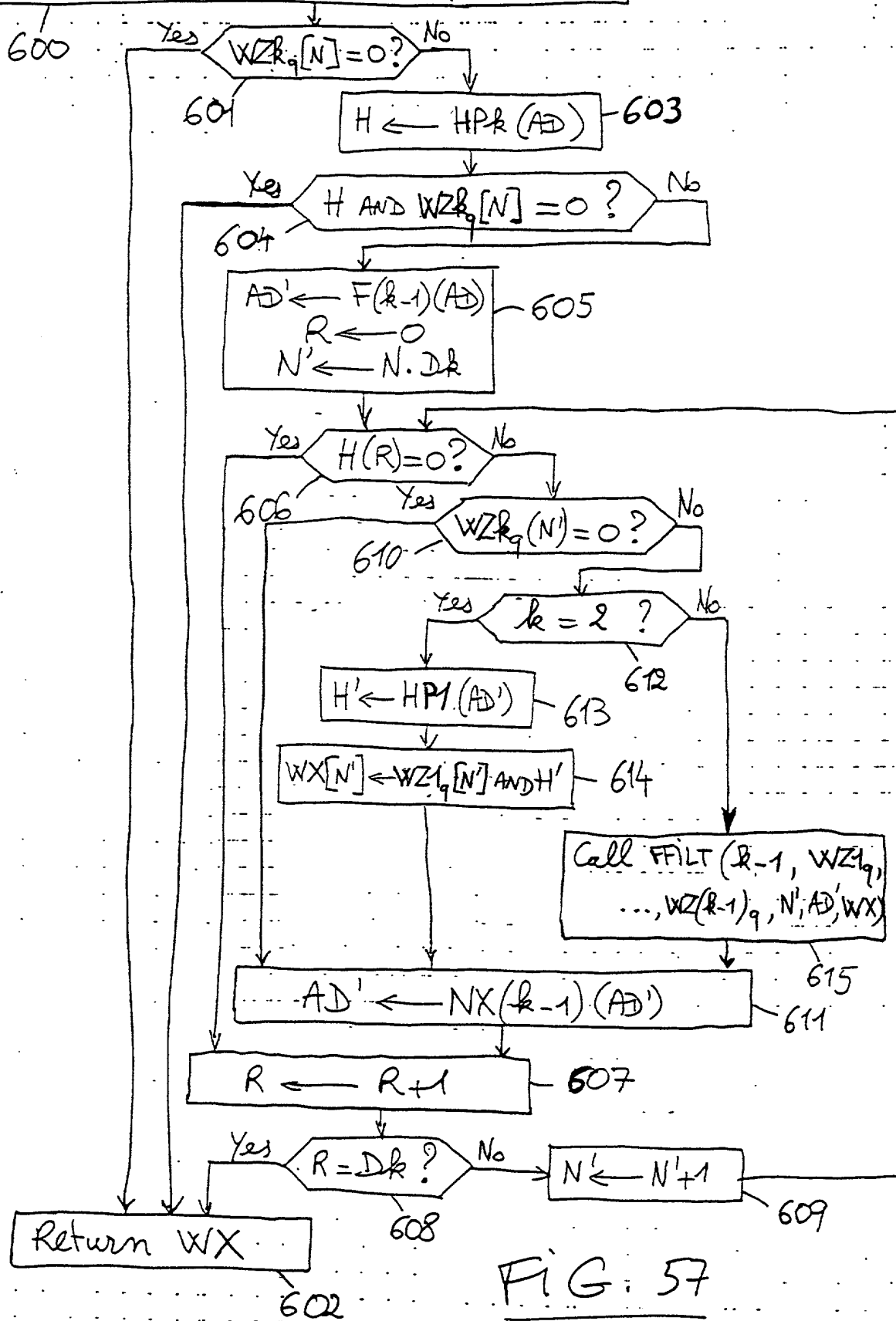


FIG. 56

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Start FFILT($R, WZ_1, \dots, WZ_R, N; AD, WX$)



CLIENT NAME

NO2 F_AD'

0	1
1	5

FIG. 58ACC. AMOUNT

NO2 F_AD'

0	10
1	16

FIG. 59ACC. AMOUNT / 3

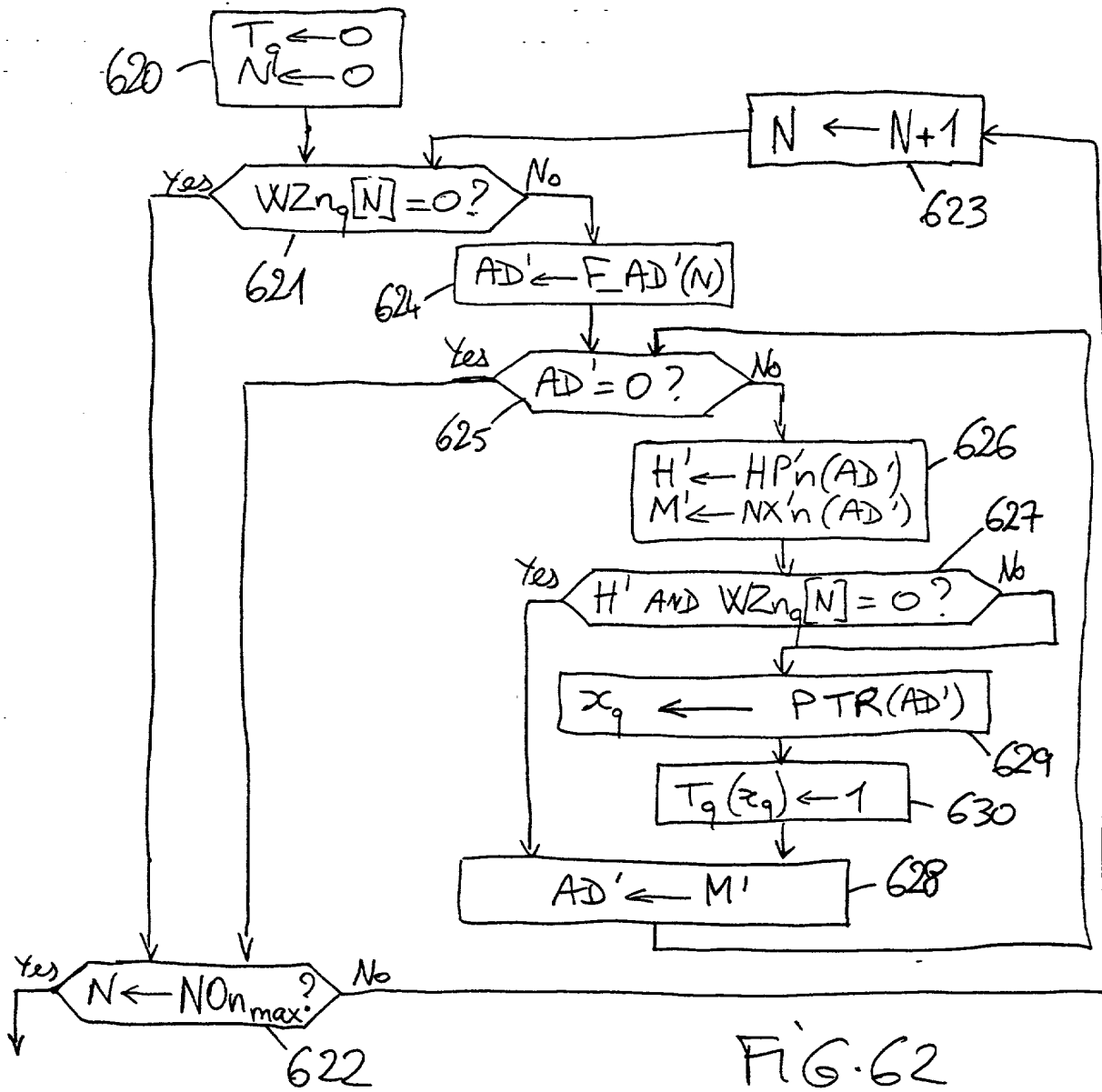
NO2 F_AD'

0	20
1	24

FIG. 60

AD'	HP'2	NX'2	PTR
1	11	2	1
2	10	3	2
3	01	4	3
4	10	0	4
5	10	6	1
6	10	7	2
7	01	8	3
8	11	9	4
9	01	0	5
10	01	11	1
11	10	12	2
12	10	13	3
13	01	14	4
14	01	15	5
15	10	0	7
16	01	17	0
17	10	18	2
18	10	19	3
19	10	0	6
20	11	21	0
21	01	22	1
22	01	23	2
23	10	0	4
24	10	25	0
25	10	26	1
26	10	0	3
27	00	28	x
28	00	29	x
29	00	30	x
30	00	0	x

FIG. 61



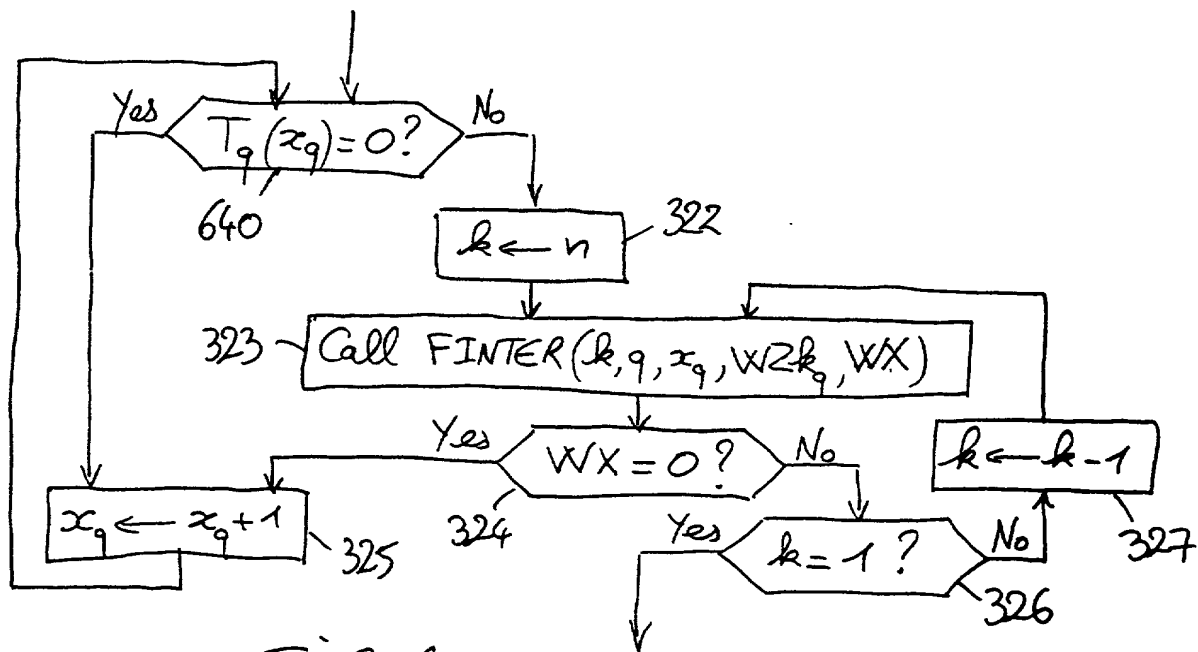


FIG. 63

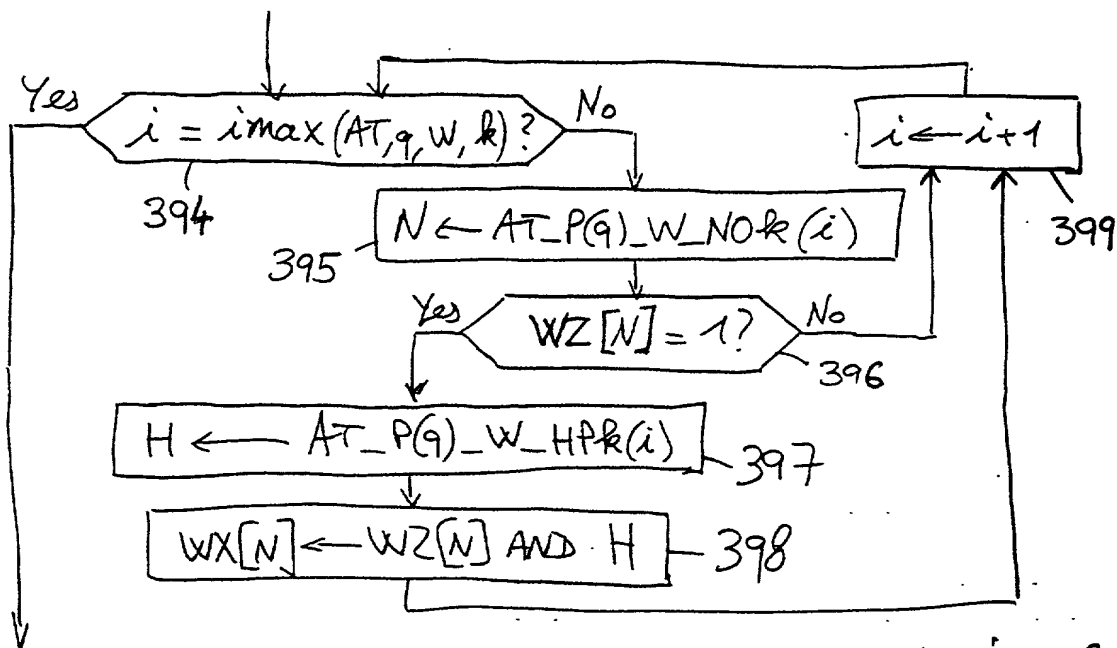
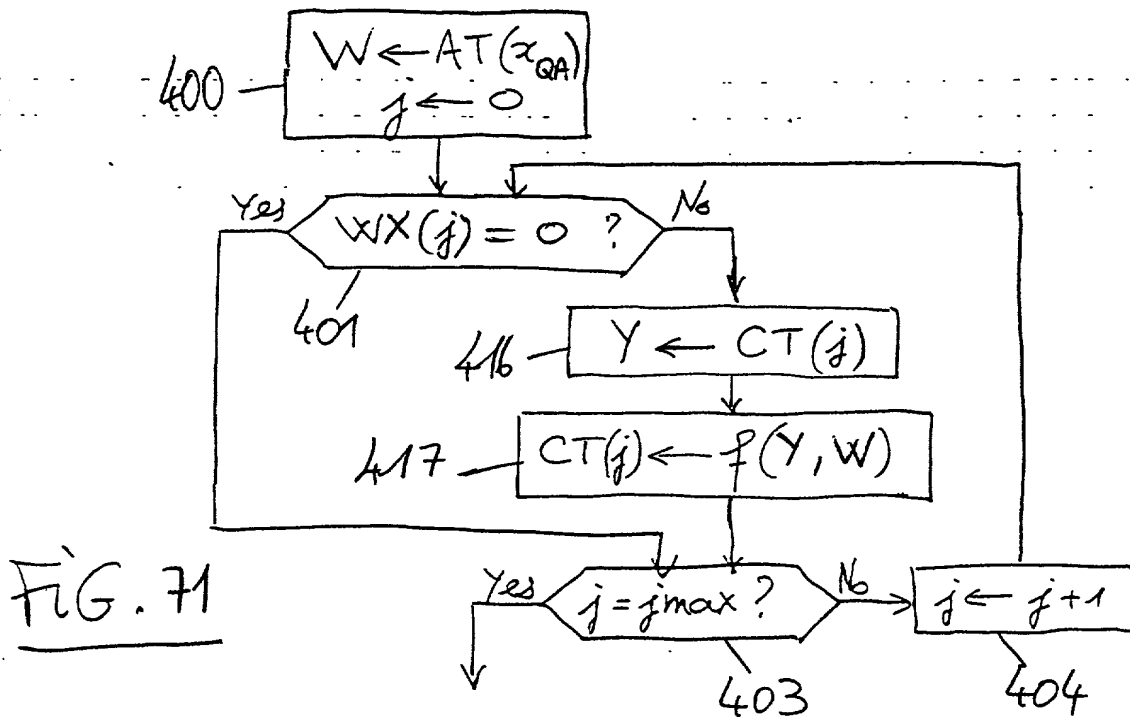
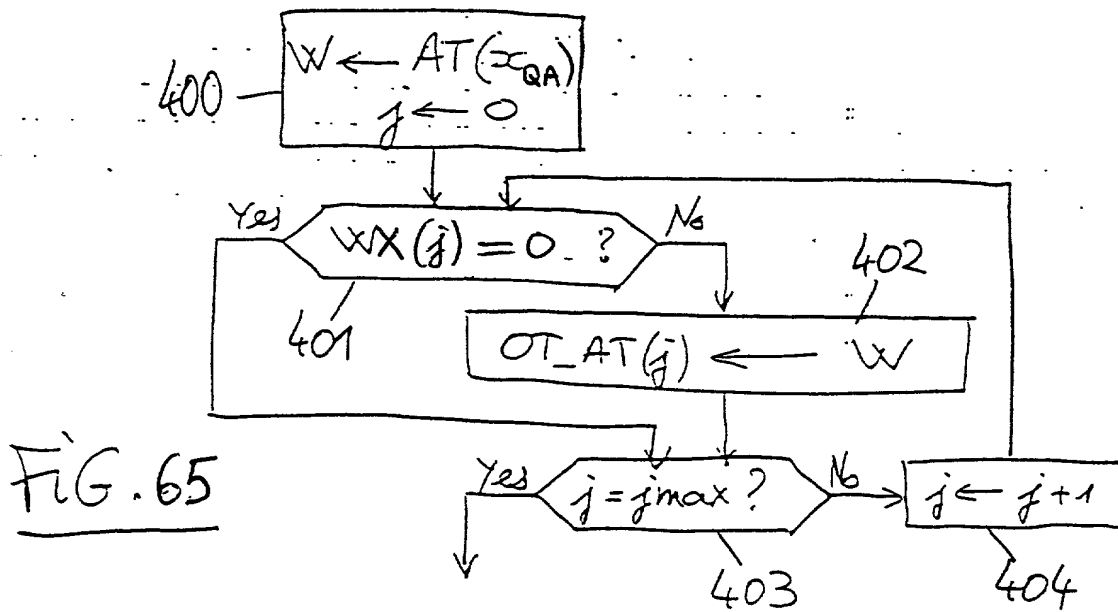


FIG. 64



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OUTPUT TABLE

Flat File Row-ID Acc. Date Client Name Policy Date

0	1998 10 03	André	1998 09 09
1	/	/	/
2	1999 04 18	Max	1999 01 10
3	1999 06 12	André	1998 09 09
4	/	/	/
5	/	/	/
6	/	/	/
7	/	/	/
8	2000 03 20	André	1998 09 09
9	/	/	/
10	/	/	/
11	/	/	/

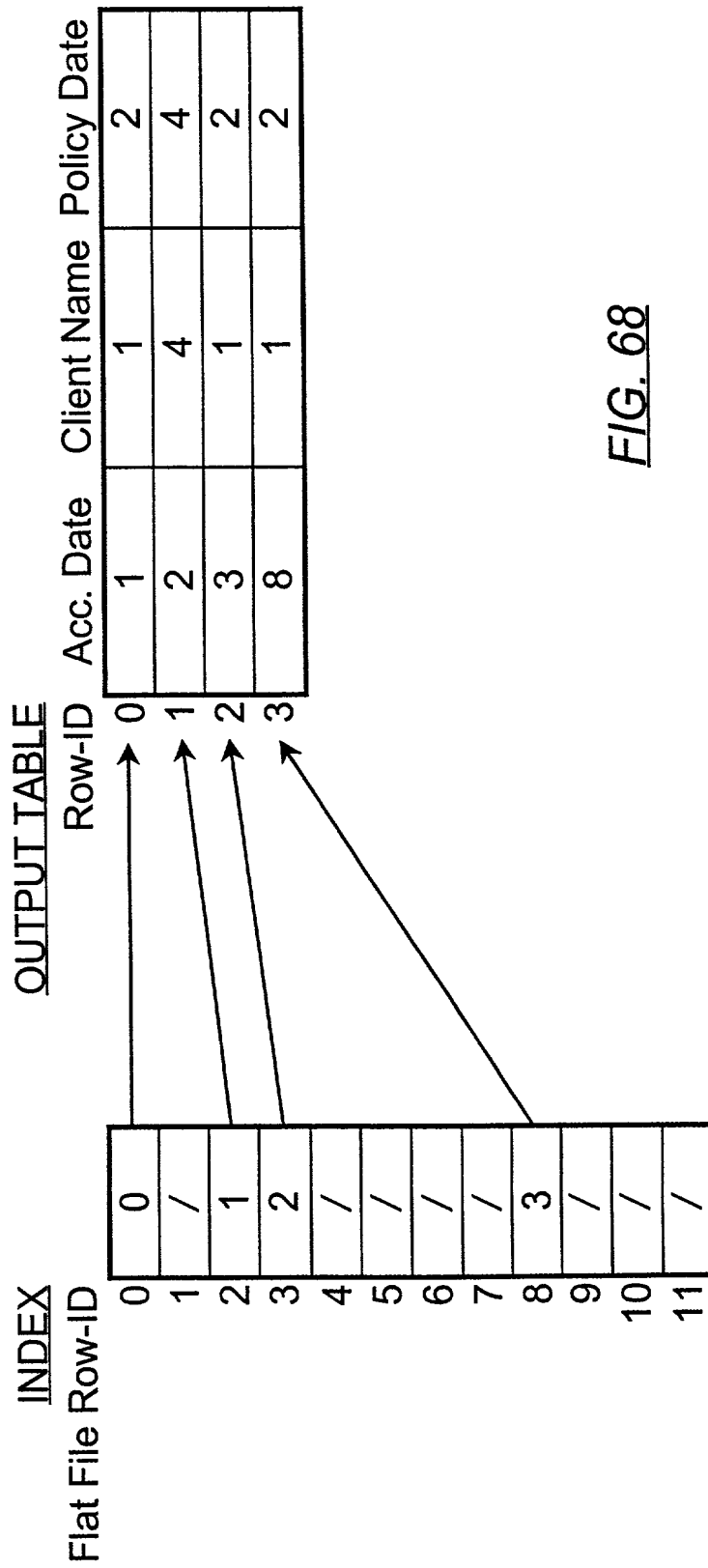
FIG. 66

OUTPUT TABLE

Flat File Row-ID Acc. Date Client Name Policy Date

0	1	1	2
1	/	/	/
2	2	4	4
3	3	1	2
4	/	/	/
5	/	/	/
6	/	/	/
7	/	/	/
8	8	1	2
9	/	/	/
10	/	/	/
11	/	/	/

FIG. 67



S6/S7

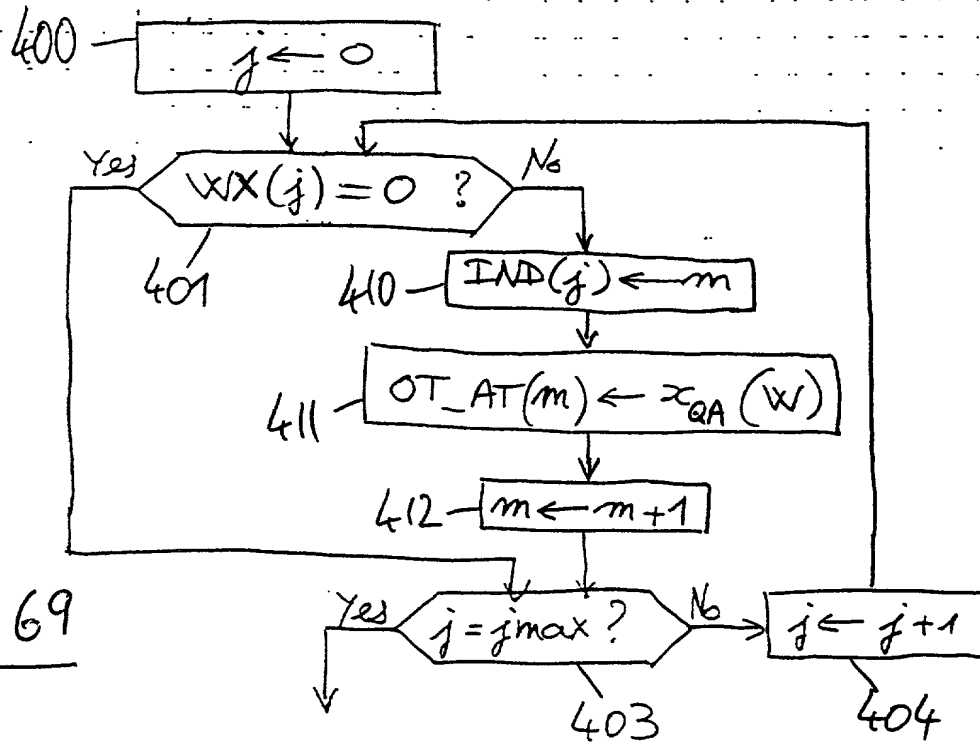


FIG. 69

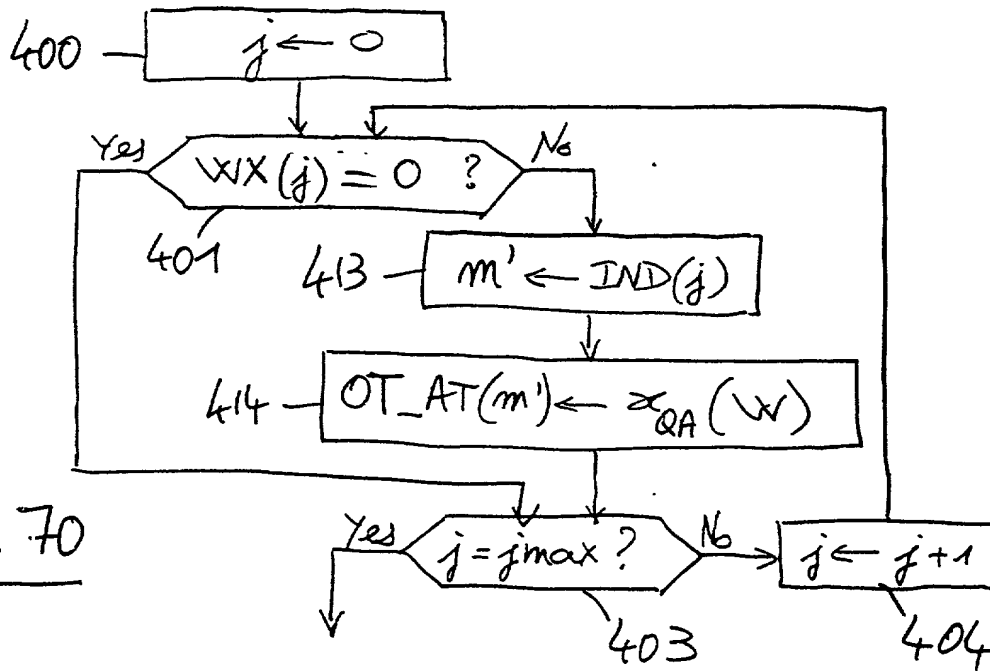


FIG. 70

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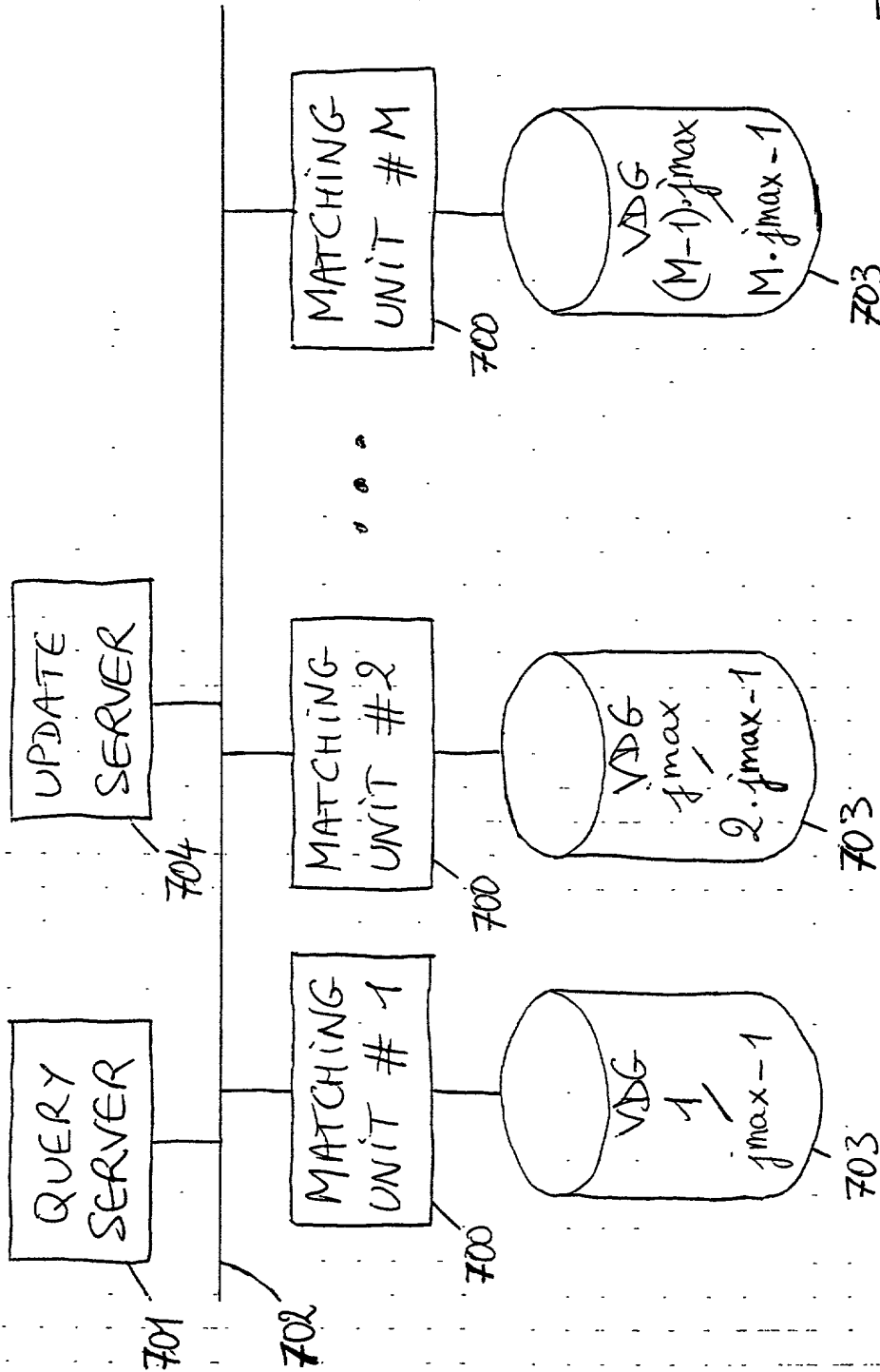


FIG. 72